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Editor's Column: Did Reading Save my Mental Health?

Adriane M. F. Sanders

This semester has been *different* for me. Very different in fact, but not on paper. That is, my workload hasn't changed—the ever increasing administrative and documentation-related work being pushed down from higher ed leadership onto their professors, the volume of emails and paperwork and hoop-jumping that is unrelated to teaching and mentoring students has not changed in the least. As I write this, I'm in that weird void between the end of fall semester and the week before Christmas (aka, the time when instead of relaxing I'm rushing around like a madwoman trying to make things merry and bright). By this time last year, I was so burned out I felt like I was watching the extended family gathering in my home from some place in the rafters, out of body, completely disconnected with no desire to interact. I know the holidays (or even just family) can bring out all sorts of emotions, welcome and not, but I knew these feelings were from the fumes I was coasting on after the semester had absolutely taken it all from me. I felt like a shell. And today, I don't. Despite nothing changing in my day-to-day utter busyness during the semester all the way through to now, it has felt compartmentalized and generally kept in its place. I've caught myself saying what a good semester it has been more than once (even if you may have seen me frazzled in the office on any given day). Naturally, I've been trying to figure out what's changed if it's not reduced work demands. I feel like at least some part of it is that I'm finally embodying some of the things I've been working on in therapy rather than trying to cognitively impose them, so that's a win. But honestly, I think the biggest change I've made is consistently, unwaveringly, almost obsessively reading for fun. Let's pause to let the collective <scoff> we all just let out to dissipate.

Here's a little backstory. I have always enjoyed reading, since I was a kid (thanks mom!). When I got to grad school, I would still make time to read for fun, but not as often or consistently. As the semesters wore on, I stopped making time to read for pleasure. Scholarly reading was a huge chunk of my day to day, and by the time I was working on my dissertation, the last thing I was making time for was more reading. As an overachieving new hire, I was also not making time for anything else that required focus. Sure I would still buy books and even start them, but my nightstand had become a graveyard of DNFs ("did not finish"). Almost all of these books had also become some form of work—the titles I was now picking up all had to do with parenting and teaching. Without realizing it, I had not only lost the habit of reading for fun, but I no longer knew what was fun to read! What started as cautiously dipping a toe back into the waters at the encouragement of my therapist slowly became an utter deep dive. So much so, you could say I'm now just sitting on the bottom of the ocean floor with one of too many good books on my ever-growing TBR ("to be read") list. AND I LOVE IT. After that initial return to books, I began getting impatient with how long it would take me to move from finishing one book to deciding on the next, and I felt like I didn't remember how to find a book I wanted to read. I created a TikTok account just so I could get on #BookTok (a friend told me that's how they found their next reads). I wasn't sure what to expect, but have found it to be a wild, slightly unhinged, very welcoming, absolute *community* of readers of every kind—from casual to voracious readers, from the eclectic and genre-hopping bibliophiles to the highly opinionated genre, author, and even modality snobs. But I learned things from all of them, like some of the nerdy book lingo I've been using here and, more importantly, how to better recognize my tastes and preferences to help me find more books to enjoy. Posts like: "If you liked this, you'll also like this" and "If you liked this but hated this character or trope, try this instead" are very helpful. And understanding the references in funny or contemplative posts about a character or something that happened in a book I've read (or reader reactions to those things!) make me feel like I am in a not-so-secret society.

That first dip back into books was December 2021, and slowly over time thinking about books, sharing books, and reading them grew back into a real hobby. Let's call it "booking" because it entails more than just reading at this point. I'm reading 5–7 books most months. I'm not trying to achieve any goals; in fact, I do not have any goals related to reading other than to enjoy myself. I'm just actively engaged in tending this hobby as one might tend their garden, their model planes, woodworking, video games, or photography. And this whole process has taught me so much about myself in so many other regards. What began as an exploration of books has become a full on self-study to discover, redefine, and articulate all aspects of me. The curiosity and hunger I feel as I'm booking has also manifested in listening to new kinds of music and trying new culinary dishes even at places I frequent. The presence of mind I need in order to feel connected when I'm reading a story has shown up as mindfulness in the crux of a moment, allowing me to hit pause so I can check in with myself. Saying "yes" to completely indulging myself in booking [*simply because it feels good*](#) has led me to say yes to more things for the same simple reason.¹ Recognizing that it is ok to have my own preferences for what I like to read and to unapologetically act on them has empowered me to prioritize other preferences more often.²

Who knows if this enlightenment, joy, dare I say "balance" will stick, but I will enjoy and appreciate it fully while it's here, and hopefully muscle memory will kick in should I lose my way in the future. I initially thought about writing this column weeks back when I was in the shower and quite literally thought to myself, "Did reading save my mental health?!" But I think reading/booking could be exchanged for an infinite selection of other hobbies, indulgences, sports, any "activity" that stokes your enthusiasm, quells the quiet rage you may be carrying, and/or loosens your pressure valve. Maybe books don't do this for you. What does? If you don't have an answer to that, try thinking about things you used to enjoy or try something new as a solo expedition or with a friend. Allow yourself to explore possible outlets without the internal voice telling you there's not enough time for another activity and avoid the urge to should all over this (i.e., I *should* do ____insert whatever activity you either don't really want or that doesn't fit with the rest of your life right now). Trust that you will find one that fits, and you'll know it because it won't feel like another to do; this should feel easy. And as you shop around, really try to study yourself during and after the experiences. Once you've found something that feels right, tend it. Take special care with it because it is giving directly back to you. I have (somewhat) jokingly thought, is this my midlife crisis? It's not like one I've ever heard of before. I googled antonyms for "crisis" and ya know, a "midlife wonder" is much more apropos. **We all need to spend more time unapologetically tending and indulging in self-wonder.**

Cheers to 2024 friends!

Notes

¹ Did you know that the definition of hedonism is actually devoid of judgment and negativity?

² Just today, I felt the oh-so-common pang of mom guilt for not doing something I physically *could* do if I put forth enough effort. As soon as I felt it, I thought, I matter too. She still feels my love and care for her, and I am still a good mother if I choose my preferences over hers.

The Bridge: Connecting Science and Practice

Sarah Layman, DCI; Jen Harvel, Amazon; & Apryl Brodersen, Metropolitan State University of Denver



“The Bridge: Connecting Science and Practice” is a *TIP* column that seeks to help facilitate additional learning and knowledge transfer to encourage sound, evidence-based practice. It can provide academics with an opportunity to discuss the potential and/or realized practical implications of their research as well as learn about cutting-edge practice issues or questions that

could inform new research programs or studies. For practitioners, it provides opportunities to learn about the latest research findings that could prompt new techniques, solutions, or services that would benefit the external client community. It also provides practitioners with an opportunity to highlight key practice issues, challenges, trends, and so forth that may benefit from additional research.

In this issue, **Marisa Rosen** discusses the factors that impact employee willingness to speak up over time in their organizations. The goal of this column is to provide empirically based advice to help managers foster a culture of employee voice and support.



Encouraging Voice Over Time

Marisa A. Rosen
OrgVitality

Introduction

Organizations can and should make efforts to create an environment where people feel safe to speak up, but they also must close the loop on employees’ ideas. Closing the loop is an underutilized way organizations can build retention because it demonstrates support and appreciation of employees’ ideas, even if implementing certain ideas is not possible. Managers and supervisors are an important extension of the organization and, as such, are a critical component of accomplishing this task. This column focuses on the research and practice of how managers can support employees’ voice over time and, ultimately, help retain their employees.

What Is Voice?

People are a large, often untapped, source of information in organizations. They have innovative ideas and see solutions to organizational problems. Both are examples of two distinct types of voice behaviors necessary for any organization’s longevity (Liang et al., 2012). The goal of speaking up (or “voice”) is for employees to innovate and solve problems that promote the success of the business (Van Dyne & LePine, 1998).

However, speaking up often challenges the status quo and is inherently risky (Morrison, 2014). People may be afraid of their manager’s reaction when posing ideas (Detert & Edmondson, 2011), especially those that identify problems (Wei et al., 2015). Interestingly, some evidence suggests apathy may be more common than fear (Hao et al., 2022). That is, if employees lack the confidence that their voice will

result in change, they may feel it is pointless to say anything at all (Sherf et al., 2021) and lead them to leave (Knoll & van Dick, 2013).

Feeling unsafe or powerless to speak up are examples of barriers to a *single* instance of speaking up (Morrison, 2023). Research is now uncovering the iterative nature of speaking up; thus, understanding how to encourage employees to speak up throughout their tenure is crucial (Kim, Lam, et al., 2023). Once an employee speaks up, several environmental factors can influence their decision to do so in the future (e.g., King et al., 2019). Creating a climate where employees feel comfortable speaking up over time is a business imperative from both an innovation and employee retention perspective.

Step 1: Promoting Voice

Voice Climate

The working environment plays a role in how comfortable employees are speaking up (Chamberlin et al., 2017). Much research on voice climate—or the shared beliefs about how acceptable it is to speak up—shows how positive perceptions predict voice behaviors and performance (Morrison et al., 2011). When employees feel generally encouraged or empowered to speak up, they are more likely to do it (Frazier & Fainshmidt, 2012). However, when situations are uncertain or dissatisfying, employees avoid voicing. For example, when employees perceived a highly political environment in their organization, voice behaviors were likely to decline (Bergeron & Thompson, 2020).

Leaders influence organizational culture and climate and are therefore key to creating a positive working environment (e.g., Morrison et al., 2011). For example, when leaders are authentic, it can help cultivate better employee relationships with the organization when dissatisfying work events occur. These characteristics are important to promoting voice and reducing turnover in organizations (Kim, Lee, et al., 2023). Negative supervisor behaviors (e.g., hostility) are associated with undermining voice climate and decreasing subsequent voice behaviors (Frazier & Bowler, 2015). The following sections focus on the relationship dynamic between leaders or managers and people who speak up (or voicers).

Positive Manager Behaviors

Leadership may be one of the best supported tactics that influences voice (Chamberlin et al., 2017). Building trust and psychological safety can help employees feel more comfortable speaking up because both reduce perceived risk (Chamberlin et al., 2017; Hao et al., 2022; Sherf et al., 2021). Managers or supervisors can cultivate safe and trusting environments through developing high-quality relationships within their team (Duan et al., 2019; Gao et al., 2011). Soliciting employee ideas, inspiring their team to innovate, exhibiting ethical behaviors (e.g., respect, fairness, concern, integrity), and demonstrating interest in the employee's needs and goals are ways managers can develop their relationships (Kim, Lam, et al., 2023). These tactics signal to employees that their manager is willing to listen, values their input, and is more likely to positively respond to their ideas. Skill-, motivation-, and opportunity-enhancing manager behaviors can also help empower employees to speak up (Chamberlin et al., 2018).

Negative Manager Behaviors

Although some manager behaviors can promote good relationships with employees or teammates, there are some that can inhibit these relationships. People value consistency, and when there is a breach in consistency, that creates discomfort and lack of trust (Li et al., 2020). An example of this is the

psychological contract, which is the employee's perception that they are getting what was promised to them when agreeing to work for an organization. If a manager breaks that promise, such as by delaying a promised raise or promotion, then the employee will trust their manager less than before (e.g., Afshan et al., 2021). Under these circumstances, an employee may feel undervalued and may believe contributing their idea is pointless (Wang & Hsieh, 2014). Uncertainty activates similar reactions in us as well. When employees are not sure how managers will react, perhaps because that manager demonstrates self-serving or highly political behaviors, or if the future of their jobs is unclear, employees may feel speaking up is too risky (Bergeron & Thompson, 2020; Kim, Lee, et al., 2023; Li et al., 2020).

Step 2: Manager Endorsement

Once employees feel safe to speak up, how can they make it more likely their manager will listen to their idea? Most research positions the organization, content, delivery, and timing of the message as key factors.

Status and Tone

Related to status, more expert (Whiting et al., 2012), credible (Lam et al., 2019), and high-status (Howell et al., 2015) employees are more likely to receive positive reactions or endorsement from their managers. In terms of delivery, the tone, expression of respect, friendliness, empathy, and humble language contribute to increasing the likelihood managers will endorse voice (Lam et al., 2019).

Further evidence suggests that tone and status together will influence voice endorsement. Interestingly, higher status individuals, who likely feel more comfortable in their teams, may be more careless with their tone broaching an idea with a manager and prompt a negative response. Lower status individuals, on the other hand, through the support of their team and maintaining a polite tone, tend to receive more positive reactions from managers (Kim et al., 2022). Taken together, this suggests that tone may be more important than status for leader endorsement, and employees can build their credibility over time through speaking up.

Idea Content

The content of ideas, such as perceived importance, resources, and interdependencies necessary to implement an idea, is an important component managers consider when employees speak up. Typically, more complex ideas received less endorsement, so highlighting the importance of the idea can help (Burris et al., 2017). Quality (usefulness, novelty, or practicality of ideas) plays a role too. Intuitively, high-quality ideas lead to positive peer and supervisor evaluations of the voicer. Low-quality ideas lead to more negative evaluations, and that outcome is exaggerated when the low-quality ideas are shared often, leading to perceptions of incompetence. Getting initial feedback on an idea could help ensure it is high quality and will be well received (Brykman & Raver, 2021). If a peer publicly endorses an employee's idea, this can also aid perceptions of idea quality (Bain et al., 2021). Presenting a solution along with feedback helps with likability and performance evaluations (Whiting et al., 2012).

Relationship Context

The relationship an employee and manager have matters for manager endorsement. Relationships with higher quality exchanges and trust increase the likelihood of endorsement (Kim, Lam, et al., 2023). Sometimes those relationships are not possible; as such, tailoring how you speak up can help with en-

dorsement. In close relationships between employees and their manager (defined in terms of demographic and spatial similarity), voicing colloquially or explaining *how* an idea could be executed increases the chances voice will be endorsed. In contrast, in more distant relationships (more dissimilarity), speaking politely or explaining *why* an idea could be useful leads to greater endorsement (Schreurs et al., 2020). Managers decipher tone (e.g., colloquial vs. polite) and content (e.g., explaining how vs. why) of voice in the context of their relationships, which influences their endorsement of ideas.

Timing

Timing plays a role too. When employees speak up earlier in a project's life cycle, the idea may be more usable compared to bringing up an idea or solution later in the project (Whiting et al., 2012). Evidence suggests the type of message, either innovation or problem focused, has greater impact at different stages of change. When reacting to external change, such as a global pandemic, focusing on more problem-focused voice can help teams correct/prevent errors and improve later performance. Once the team has recovered from the change-induced dips in performance, that is a better time to make innovative suggestions that can help improve team processes over time (Li & Tangirala, 2022). Time and content of messaging matters, and employees should consider those contextual factors to improve the likelihood managers will endorse their suggestions.

Step 3: Closing the Loop

Compared to the other research discussed so far, what happens after an idea is endorsed or rejected is much less investigated. What we do know from the limited findings makes sense. When employees' ideas are endorsed, they speak up more. The opposite is true when ideas are rejected (Brykman & Maerz, 2023). Rejection (or nonendorsement) can be particularly painful for employees who intend to stay with the organization because they care about contributing to the organization's success (King et al., 2019; Ng et al., 2022). Previous reactions to speaking up clearly matter for voicers' willingness to do it again in the future.

How Managers Should Reject Ideas

How managers reject ideas matters for future idea generation and employees' desire to remain at the organization. Managers who provide a sensitive explanation why they cannot endorse an idea help employees feel safe to speak up again in the future. Sensitive explanations communicate respect and consideration that ameliorate the emotional distress from rejection and allow people to move forward in their working relationships (King et al., 2019). Providing social feedback, such as appreciating when employees do speak up, can help encourage voice in the future because it supports engagement (Weiss & Zacher, 2022).

Create a Feedback-Supportive Climate/Culture

In practice, some companies have added stipulations on rejecting ideas. For example, Pixar requires that people provide suggestions or feedback on rejected ideas to continue to innovate and curtail mistakes (Catmull, 2008). Normalizing rejection and providing feedback can help cultivate a company culture where everyone can strive to think of better ideas and solutions (Ng et al., 2022). Related research discussed earlier on voice climate helps support these ideas.

Maintain the Relationship With the Voicer

Although there is limited evidence in this space, finding ways to maintain the relationship with the voicer will likely improve the future rate of speaking up. Employees who feel appreciated and have a trusting relationship with their supervisor are more likely to voice in the future (Kim, Lam, et al., 2023). More research is needed to find specific tactics that will promote future voice, particularly when ideas cannot be endorsed.

Conclusion

Overall, we know more about how to encourage employees to speak up once rather than over time. Researchers and practitioners still need to discover ways to increase positive outcomes from speaking up, including encouraging it in the face of rejection. These findings will have crucial implications for maintaining an engaged workforce. For now, here are some useful, research-based tactics that can help managers believe in employee ideas, make ideas more actionable, and facilitate persistence among employees to speak up. These include

Conditions for speaking up

Manager	Solicit and listen to employee ideas Be open to suggestions Be interested in your employees' success Enhance employees' skills, motivation, and opportunities Empower employees with participative decision making, keeping people informed, and coaching Create trust and psychological safety Dispel employee or teammate reasons for not speaking up Cultivate a climate for speaking up through encouraging voice, providing feedback, and normalizing idea rejection
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Increasing the likelihood of endorsement

Voicer	Get feedback first to manage idea quality Get a peer to endorse your idea Present a solution if you speak up about a problem Manage the delivery of your message (tone, content, language, timing, etc.) Let your status inform how you deliver your message Let your relationship quality with whom you are speaking up to inform how you deliver your message Invest in the relationship with whom you are speaking up to
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Closing the loop

Manager	Provide sensitive explanations when endorsement isn't possible Be appreciative and supportive when employees do speak up Provide feedback Check on your relationship with the voicer
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Promote the voicer's efficacy
 Be mindful of the ideas you reject—try to implement some employee ideas in an equitable way
 Encourage people to speak up, even after their idea has been rejected
 Continue to support a climate for speaking up

Developing your manager–employee relationship

Manager

Demonstrate ethical behavior (e.g., respect, fairness, concern, integrity)
 Be authentic
 Demonstrate interest in the employee's needs and goals
 Be consistent with what you say and do
 Avoid being political or unclear

Voicer

Build perceptions of competence
 Avoid threatening manager image
 Demonstrating other-oriented or community-oriented behaviors

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VR Technology in Organizational Management: Natural Disaster or Perfect Storm

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Virtual reality (VR) is currently a multibillion-dollar industry (Lupinek et al., 2021), with increasing interest from experts in workplace management who continue to explore potential applications for this technology. There is a growing interest in employing VR for research within professional work environments. (e.g., Aguinis et al., 2001; Alcañiz & Giglioli, 2018; Cipresso et al., 2018; Haber et al., 2023; Hubbard & Aguinis, 2023; Sanchez et al., 2022; Weiner & Sanchez, 2020). However, the current research in this domain remains constrained, as evidenced by the scarcity of VR-related publications within I-O-relevant journals (e.g., Highhouse et al., 2020). In a preliminary search using Google Scholar of 38 prominent, I-O-relevant journals, only nine articles have been published with the term “virtual reality” in the title since 2013. Virtual reality has only been mentioned less than 200 times. Given the growing interest with limited research on VR for workplace management, we pose an important concept that threatens many emerging technologies: Will VR for workplace management become an obsolete technology over time, or will VR succeed as a sustained and established technology? We consider two potential outcomes of VR. The first entails a trajectory resembling a *natural disaster* headed toward obsolescence; the second envisions a *perfect storm* of factors that will lead to the establishment of VR tech in workplace management. We close with recommendations for the consideration and effective utilization of VR within applied settings of workplace management.

VR as a Natural Disaster—Becoming Obsolete

In first considering VR as a potential natural disaster, we highlight several areas that may contribute to the technology becoming obsolete. In considering the problematic concerns about VR, we focus primarily on perceived inaccessibility, creating a poor user experience, and unclear benefits for organizational adoption.

One challenge that VR technology has had to overcome is the preexisting concept of what VR entails. Many people draw to mind an image of the 1980s VR system (see Figure 1), with the limited features and functionality of what 1980s technology had to offer. This fails to convey the modern VR experience, which is far more streamlined than its 1980s counterpart. The historical VR system had limited mobility with large, heavy pieces of equipment that were attached to large computer systems and often impractical and restricting to wear. The hardware limited mobility, which was the primary function of the software, to mimic movement in a virtual work. Counter to this, modern VR consoles like Oculus Rift, Meta Quest, and HTC Vive are portable and allow

Figure 1

Advancements in Virtual Reality Technology



Sword of Damocles (1968)



Nintendo Virtual Boy (1995)



Oculus Rift (2016)



Apple Vision Pro (2024)

users freedom of movement. Additionally, the historical VR systems were difficult to find and expensive to purchase, making the historical versions of VR inaccessible to most everyday consumers.

One of the areas for improvement in VR lies in enhancing the user experience to ensure its reputation as a highly immersive and satisfying technology. This area for improvement also stems from early perceptions of dated VR technology, where the virtual environment lacked realism and prevented having an immersive experience. This lack of realism hindered the practical applications of VR technology and made it seem impractical to the general public, limiting its commercial success. For example, Nintendo's Virtual Boy in 1995 failed to gain mass adoption because it was expensive, had poor graphics, and couldn't contend with higher quality non-VR gaming alternatives (Zachara & Zagal, 2009). Although the realism of VR is largely a concern of the past, modern concerns still exist surrounding concerns over users reported motion sickness, eye strain, and fatigue. Ongoing research has focused on addressing these issues (Martinez & Checa, 2023), and many VR experiences now incorporate comfort features to reduce these negative experiences and mitigate the risk of motion sickness (Hirzle et al., 2022).

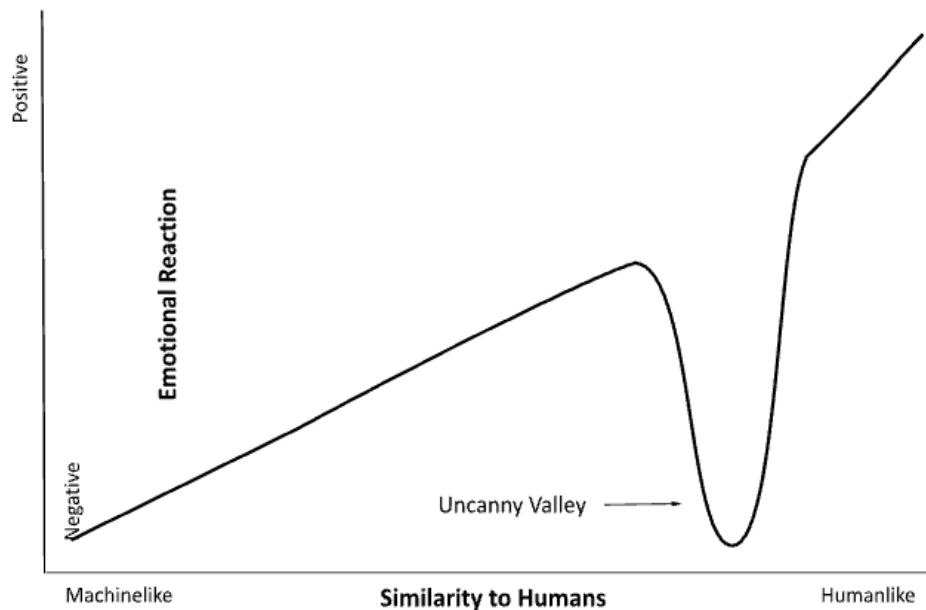
Another challenge for VR development has been the lack of establishing clear evidence for the benefits and outcomes that VR can offer organizations. Given that VR has to contend with inexpensive, alternative technologies, other options may overshadow any perceived effectiveness of using VR. Taking a risk and investing in a new technology needs to have obvious benefits for an organization. Choosing between different technologies presents a further challenge for organizations as VR development has lacked standardization in its development. Different organizations and developers have pursued their own approaches, resulting in a fragmented landscape of VR technologies. This highlights the need for collaboration and shared understanding to ensure long-term sustainability. The uncertainty on how the technology can be established and implemented, and not knowing how management and employees will be prepared and trained for the technology, leaves a lot of uncertainty for organizations. Virtual reality as a new medium of instruction also raises a concern of content creation; as a novel medium of delivery, there does not exist a precedent on how to effectively use virtual reality as a medium of training, instruction, or application. This raises a concern on how virtual reality ought to be included within existing workflows.

As virtual reality technologies attempt to simulate real life with as high fidelity as possible, another issue that virtual reality contends with as its graphics increase are sensory and perception issues related to human cognition. An example of this would be motion sickness that accompanies poorly tuned virtual reality experiences, in which an absence of physical motion combined with visually perceived motion results in nausea, dizziness, or sweating (Kennedy et al., 2010). Furthermore, when attempts to replicate reality with high fidelity fail to be convincing, individuals may experience eeriness and discomfort in the form of the *uncanny valley* (virtual images resemble humans to the point that it creates a sense of unease; Stein & Ohler, 2017). The uncanny valley references a sudden drop in likability when a virtual image is almost human but not passing as human (see Figure 2). When a simulation is real enough that it feels plausible but too scripted that it is disconnected from reality, a sense of unease is created in the user. Although this was not an issue that was pressing in older virtual reality models, as the low-fidelity simulations created a clear distinction between the simulation and reality, as technology develops to improve visual displays, the line between a simulated world and the real one continues to blur.

Historically we can observe several technological challenges that hindered the proliferation of VR across workplace settings. Although many of these have been addressed and helped grow the VR industry to where it is now, many challenges—both old and new—remain and may cause VR to become obsolete.

Figure 2

Emotional Reactions Toward a Virtual Image Generally Become More Positive as the Human Likeness of the Image Increases



Note. When the human likeness of a virtual image isn't passable as a human, the positive reactions towards the image face a sudden drop; commonly referred to as the uncanny valley.

VR as a Perfect Storm—Establishing Success

Technology might be a perfect storm of factors that leads to the continued growth of VR. Meaning, there are a number of reasons for the rise of the current generation of VR. VR today is different from the VR technology from the 1980s and 1990s. As we mentioned, the previous generation of VR was limited in a number of ways the current generation of technology is not. For example, modern VR equipment is relatively accessible with a variety of systems available for purchase off the shelf. The equipment can be inexpensive with commercial VR systems starting at around \$200 USD and upward of several thousand dollars depending on the features and capabilities desired. Set up is also user-friendly, requiring a similar degree of technological knowledge and skill as using a cellphone or other mobile device. These factors make purchasing and using a VR device a relatively easy task for individual users.

An additional factor of current VR systems is that they offer consistently high-fidelity, realistic environments. The degree to which users can feel present and immersed in the virtual environment is unmatched by other technology today. Presence is the degree to which an individual feels transported to the place and time of the VR environment (Vankov & Jankovszky, 2021). Other technologies rarely replicate this feeling of truly being in the virtual environment. Moreover, VR can enable a user to embody a character or avatar in a VR environment. This so-called *Proteus Effect* (Praetorius & Görlich, 2020) demonstrates that a user can embody a virtual avatar within a short period of time by synchronously matching the avatar's movements to the movements of the user (Gonzalez-Franco & Peck, 2018). This unique VR feature is something researchers have gravitated toward (Szolín et al., 2022) because, prior to VR, simultaneous stimuli such as brushes on an arm (e.g., the rubber hand experiment) were a common method for generating a sense of embodiment or ownership (Riemer et al., 2019).

One measurement challenge we face in workplace psychology is collecting accurate information from people and avoiding error from social desirability, faking, or inaccurate self-awareness. One potential benefit of VR is that depending on the design of an experience, we may be able to collect authentic information about people while avoiding the error mentioned above. Although research in this area is limited and results are mixed, there is some support to show that individuals may behave in authentic ways depending on how they are primed for the experience (Moon, 2018). Improving instructions on how users should behave, reducing the transparency of what is being measured, and limiting the time a user has to consider and form a response are all methods that can be designed into the VR experience.

Although the research is continuing to grow, the technology itself is also evolving. VR availability of software and individuals with expertise in VR systems is growing, meaning the ability to build and customize VR environments is expanding. We argue that VR is a perfect storm of modern technology. This doesn't mean that VR will inevitably succeed, as there are a number of reasons technology can become obsolete. However, we believe that the benefits mentioned here contribute to the likely success of VR technology moving forward. VR has the potential to progress and grow but is currently in its developmental stages contingent upon other moving factors and contexts.

Recommendations

Building on the elements discussed above, we consolidate the past disasters of VR, and its potential, as an opportunity to develop innovative studies broadening our understanding of employee behaviors and organizational phenomenon. Concretely, we highlight several crucial steps and challenges that need to be undertaken for VR to truly take off during this *perfect storm*.

1. **Interoperability:** To facilitate the seamless integration of VR systems, software, and devices into organizational research, VR researchers need to have the ability to work together and exchange data effectively. By running VR studies using the same infrastructure (i.e., code and data formats), research findings, methodologies, and best research practices can be shared effortlessly across different teams and universities. Moreover, it allows any VR study conducted using one VR system to be replicated and validated on another system. Although this is a prerequisite to enhance the quality of VR research during this perfect storm, interoperability also ensures that VR studies become more accessible and cost friendly to researchers as they can extend upon, or customize, existing VR studies using one's own developed virtual assets (or combine assets from different studies into one new study). Most importantly, there will be less dependence on multiple VR systems and headsets that can each run a distinct type of VR study. Instead, interoperable solutions allow researchers to leverage existing VR creations—and integrate open source solutions—encouraging the proliferation of VR technology for organizational research. We therefore recommend VR researchers to share their VR creations on GitHub and provide a link to their assets in their manuscripts. Similarly, aspiring VR researchers ought to consult GitHub and open source VR development platforms for access to validated VR research tools.
2. **Portability:** VR allows researchers to conduct studies and gather data in real-world environments outside of traditional laboratory or work settings. Modern (all-in-one) VR headsets allow researchers to carry their entire laboratory with them and bring immersive virtual experiences to people and locations, such as workplaces, factories, or public spaces. This flexibility enables organizational researchers to empirically study hard-to-reach working populations that would otherwise not visit a lab on the university's campus. Some VR researchers have, for instance, visited professional conferences and workshops with their VR equipment to collect data on site. Moreover, in the event that the VR experiment is interoperable (see previous point), it would allow any researcher around the world to replicate the study in the exact same experimental setting where they please, removing potential confounds between identical study setups.

3. **Context and consistency:** One of the primary reasons to conduct a VR study is to enhance the ecological validity of the research findings (Aguinis & Bradley, 2014) through the creation of immersive and believable VR environments and scenarios. Although researchers may customize the VR experience entirely to their liking, it is imperative for participants to experience a world that is consistent with real-world concepts. For instance, we can envision a VR study in which employees are tasked to collaborate with intelligent robots; however, if these robots defy the laws of physics, participants will feel disillusioned and the research findings will be compromised. In other words, participants require a virtual world they can understand, although it does not have to be realistic per se.
4. **Urgency:** Instilling a sense of urgency in participants during a VR study could serve to elicit more authentic employee behaviors. Although several traditional research methodologies provide participants with indefinite time to respond (e.g., cross-sectional surveys, vignette experiments), VR studies can be designed to prompt participants to react immediately to time-pressured situations. This may prompt participants to respond more authentically and realistically to the elements presented in virtual space, providing them with less time to generate a socially desirable response. Moreover, employees experiencing a sense of urgency are more likely to give their full attention to the study.
5. **Familiarization:** We recommend researchers allow participants—especially those participating in a VR study for the first time—sufficient time to acclimatize to their new surroundings. VR environments can be disorienting at first, particularly if the avatar the participant embodies may be different from their own real body (Guegan et al., 2016). Moreover, if the VR study requires the use of additional equipment (e.g., controllers, tracking devices), participants require extra time to familiarize themselves with the controls and virtual interactions. By allocating sufficient time to the so-called *embodiment phase*, VR researchers ensure that their participants feel a strong sense of presence during the study—bolstering the accuracy of research findings.
6. **Cybersickness:** Finally, most aspiring VR researchers are overly concerned about the potential symptoms of cybersickness participants might experience during their study. A legitimate concern a decade ago, technology has since improved to allow for smooth VR experiences with high fidelity, thereby inhibiting cybersickness that old technology and/or poor design induced. To guarantee a safe and pleasant user experience, researchers must limit unsynchronized movements within the VR study (e.g., driving a virtual car while one is seated in the lab in real life), as these may still induce nausea. Moreover, we recommend limiting the VR study to a maximum of 20 minutes, as prolonged exposure may lead to more severe disorientation the moment participants return to reality.
7. **Measurement design:** As the ability to recreate meaningful experiences in a VR environment improves, researchers and practitioners may be able to rely less on traditional methodologies. For example, in traditional *paper and pencil* style assessments with written questions, results may be confounded with individual differences such as reading level, attention span, or cognitive ability. Designing an assessment experience within a VR environment might reduce these confounds. A further improvement that could be designed into the VR environment could be issues with cognitive load and fatigue. Based on the design of the environment, the experience could be designed to reduce user fatigue and cognitive load by offering information through a variety of media (e.g., sight, sound, and touch/haptics).

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Navigating the Open Seas of AI-Based Hiring Technologies: An Open Fishbowl Discussion

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Introduction

Like other applications of artificial intelligence (AI) technologies, the use of AI-based assessments for employment purposes is increasing rapidly. These assessments may incorporate a variety of applications of AI such as (a) complex algorithms that combine data from traditional sources (e.g., Likert-scale personality tests) and/or nontraditional ones (e.g., social media data), (b) the analysis and interpretation of content from employment interviews through natural language processing (NLP), and (c) the evaluation of job candidate characteristics that may have questionable job relevance, such as facial features and vocal features. In addition, the explosion of interest in and use of ChatGPT and other large language model (LLM) applications can usefully aid in employment test development (e.g., preliminary item content generation) but may also facilitate applicant cheating on employment tests.

Both the Equal Employment Opportunity Commission (EEOC) and the Office of Federal Contract Compliance Programs (OFCCP) have made it clear that, as with traditional employment tests, AI-based assessments must also comply with Title VII of the Civil Rights Act of 1964 (amended in 1991) and the *Uniform Guidelines on Employee Selection Procedures* (UGESP, 1978; OFCCP, 2019, statement; EEOC, 2023). The White House and federal agencies, including the Department of Commerce, have also voiced their belief that AI-based assessments should take into account fairness, equity, and privacy (National Institute of Standards and Technology, 2016; White House Office of Science and Technology Policy, 2022).

State and local governments have begun enacting legislation regulating the use of AI-based assessments for employment purposes. For example, the state of Illinois enacted the Artificial Intelligence Video Interview Act (2020, amended in 2022) that requires informing candidates of the use of AI to analyze interviews, obtaining their consent, providing alternative selection procedures, and destroying recordings according to a strict time schedule (which may be in conflict with other data retention requirements such as those issued by the OFCCP and reporting race/ethnicity when the video interview is used to determine who gets an in-person interview). New York City has recently passed Local Law 144 regulating the use of automated employment decision tools (AEDTs) requiring employers to conduct and post an annual bias audit of algorithmic hiring tools that “substantially [assist] or [replace]” an employer’s discretion when hiring (Automated Employment Decision Tools, 2021).

The Society for Industrial and Organizational Psychology (SIOP) recently created a set of recommendations specifically for the use of AI-based employment assessments, reinforcing applicability of the *Principles for the Validation and Use of Personnel Selection Procedures* (2018) to all employment tests, including AI-based assessments (SIOP, 2023). Other professional groups outside of SIOP and industrial-organizational (I-O) psychology have also weighed in on the use of AI-based assessments. For example, the Institute for Workplace Equality assembled a Technical Advisory Committee composed of I-O psychologists, attorneys, and human resource leaders who produced a report, *EEO and DEI&A Considerations in*

the Use of Artificial Intelligence in Employment Decision Making (The Institute for Workplace Equality, 2022). Additionally, many organizations and individuals have discussed the issues surrounding the use of AI for employment and standards that have been created or proposed (Sonderling & Kelley, 2023).

With increasing use of AI-based assessments, coupled with heightened legal and ethical concerns, we have been working on a research project collecting and synthesizing opinions from a wide range of employment testing and machine learning (ML) experts in I-O psychology, both practitioners and academics. At the 2023 SIOP Annual Conference in Boston, we moderated an alternative open fishbowl session in which we first presented a summary of some of this survey work. Then, in the session, we gathered open-ended comments from the audience to supplement our ongoing research. Both the survey summary and open-ended comments covered a wide range of AI-based assessment topics:

1. The role of theory
2. The necessity of job analysis
3. Applicant reactions and experiences
4. Reliability and validity
5. Performance metrics for machine learning (ML) algorithms
6. Assessing adverse impact
7. Ethical issues

The 30–40 people in attendance were split into smaller groups. Each group randomly received two of the seven topics above for discussion, with each topic being addressed by at least one group. Each topic was introduced with some descriptive information, followed by several specific questions as prompts. Participants were given 15 minutes for each topic assigned to their group for a total of 30 minutes. Each group documented its responses to the questions using an online platform (Padlet.com), which were then displayed on a large screen in front of the room and used for subsequent moderator-facilitated discussions with the entire audience. Keeping in mind that there was not sufficient time to cover all participants' comments, the following summaries contain the major ideas generated in these small and large group discussions.

Content of Discussion

Small Group Discussion

To what extent are theoretical justifications necessary in employment testing (e.g., deciding among relevant predictor constructs, developing tests)?

The small group participants generally took the position that theory should support employment testing but that it is not always required. Participants also acknowledged that new or refined theory can be derived from data.

How might a job analysis that supports an AI-based assessment differ from any other assessment (e.g., in terms of sampling requirements, unique KSAOs that can be assessed)?

Three primary issues were raised by the participants. First, job analysis is important, if not essential, in maintaining the legal defensibility of assessments. Second, without a job analysis, we may miss measuring important knowledge, skills, abilities, and other attributes (KSAOs) or may have difficulty explaining and interpreting AI results. Third, participants mentioned an important need for specificity of job analysis (e.g., comprehensive set of KSAOs tailored to the job, direct ratings of tasks and KSAOs) used for AI-based assessments. The need might be greater for AI-based assessments than for traditional assessments due to the inability to calculate traditional psychometric measures (e.g., scale reliability, dimensionality).

What are general applicant perceptions regarding the fairness of AI-based selection procedures? How might applicant reactions to AI-based assessments change over time as they become more commonplace?

Some group responses described negative applicant reactions as functions of lack of transparency and human interactions, both contributing to negative perceptions of procedural or interactional justice. Another group suggested that applicant reactions may be idiosyncratic, depending on the applicant's specific preferences and prior experience with a given AI-based assessment.

How should reliability be appropriately assessed and reported for relatively complex AI-based assessments? Specifically, what approaches to reliability might be appropriate for AI-based assessments (e.g., types or extensions of internal consistency, test-retest, and alternate forms measures of reliability)?

Participants voiced the general need for assessing reliability in AI-based assessments. Although there was no consensus and many challenges in how to do so, several suggestions were made: for example, assessing internal consistency; using approaches similar to reliability assessment in computer adaptive testing; and assessing measurement consistency over time (e.g., test-retest reliability). Moreover, participants differentiated between the types of assessment data influencing the possible ways to measure reliability. It was unclear how many of those suggestions could be implemented in practice or in some cases how these suggestions differed from traditional reliability assessments.

Can machine learning (ML) performance metrics (e.g., mean-squared error, area under the curve) be interpreted as demonstrating validity, and if so, how might they be (and not be) usefully compared to correlational validities? Related to this, what defines acceptable levels (and perhaps types) of prediction or model accuracy when ML algorithms are used?

The small-group responses did not directly address the technical aspects of these questions. Nonetheless, their responses raised several interesting issues specific to AI-based assessments, such as problems in using "stealth data" that are presumably collected without the knowledge of the applicant that might include potentially irrelevant data leading to biases (e.g., word choice, facial features, or internet data) and other random noise. Concurrent validation was suggested as a practical method for validating ML-derived predictions, but problems of the nature and quality of criteria were noted, along with questions about how to deal with unreliable data and restriction of range. Further issues were discussed, such as the difficulty of generalizing to other contexts with complex ML models and lack of explainability, even if ML-based criterion-related validity were somehow supported.

How should various forms of bias (predictive bias, algorithmic bias) be assessed with respect to ML algorithms and AI implementations?

Participants suggested using AI to monitor the AI program for bias (e.g., adverse impact, item analysis auditing). Other potential applications include testing large samples, using cognitive assessments, and constantly reevaluating testing programs. Note that many responses to these questions lacked sufficient detail or did not directly address the critical problem of bias.

Is it fair for employers to seek out and use internet data that are outside the control of an applicant, accessed without the applicant's knowledge, or are out of date?

Participants reached the highest level of consensus on this question, converging on the opinion that using internet data without applicants' knowledge and consent is problematic. The most commonly mentioned data were those scraped from social media, but they could also include less obvious data such as in-game

elements like latency, mouse clicks, and so on, and individual responses to interview questions. The need to be transparent about what data are collected and how they are used was heavily emphasized. One group averred that using such data is likely more ethical if the applicant knows what information is being examined and consents to its use. Participants also expressed concern about what will happen to these data after the selection process ends, echoing a growing problem voiced by the general public, the media, and regulators and legislators (e.g., Illinois law). Generally, a major concern is repurposing data without informed consent.

Large Group Discussion

Following 30 minutes in small groups, we proceeded to a large-group discussion involving the audience, in which we summarized the Padlet responses to the questions and invited additional comments. Some of the topics more extensively discussed by the audiences include age differences in how applicants might perceive the use of AI in personnel selection, integration of AI into the workplace (e.g., for worker education), and automation of the assessment of adverse impact. It was pointed out that applicant reactions are often related to whether the applicant was hired or not. Therefore, reactions may fluctuate not only across types of tests or selection systems involving that test but also selection ratios that lead to more versus less favorable hiring outcomes.

Conclusion

The area of strongest agreement and most concern involved use of “stealth” data that are not explicitly provided by or with the knowledge of applicants. The underlying issue involved the need for AI-based selection systems to be sufficiently transparent for applicants to be adequately informed so that they can provide informed consent and, if needed, request accommodations or alternative selection procedures.

Discussions of assessing reliability of AI-based assessments were diverse, but participants identified several important issues. Of particular interest were two types of differentiation: (a) appropriate reliability evaluation based on static data (data that do not change over time, e.g., college degree obtained) and dynamic data (data that do change over time, e.g., credit scores; Wang et al., 2016), and (b) formative or summative data (combining multiple data points; Edwards & Bagozzi, 2000) versus single-variable measures (a measure based on one data point). Participants readily acknowledged the difficulties introduced by inclusion of a wide array of data types and methods of collection in evaluating ML results. Concerns about the extent and appropriateness of generalizing ML results to new situations were also apparent.

Despite broad agreement on some issues, there remained considerable diversity of thought on other topics. For example, the small-group discussions about the role of theory in AI-based selection seemed to suggest a limited concern for the need for theory as a basis for developing such assessment on the part of some, although respondents recognized the value of using theory to explain ML findings, especially in a legal defense. The small groups also expressed the importance of theory not limiting the development and application of innovative methods and tools that might not otherwise be available to researchers (an idea that was also mentioned in the large-group discussion).

The small-group response to the question about job analysis identified such information as valuable in AI assessment development, primarily in terms of defensibility and identification of job-relevant KSAOs. The discussion group tended to reflect a less central role (e.g., “concerns about legal defensibility”), although the responses also included a recommendation that job analysis in support of AI-based assessments be more “specific” than for traditional assessments that “might be better psychometrically validated.” These differences, though subtle, are consistent with the breadth of opinion that seems to be developing within I-O about the methods to be used for, need for, and value of job analysis in the AI-based selection context.

In general, the discussions during our session highlighted the continuing concerns about privacy and the use of AI in employee selection. Many I-O psychologists have important yet divergent opinions about how this area of our field might proceed. Participants expressed their worry for protection of the individual's rights and acknowledge their own uncertainty about some of the technical issues around AI and ML; others expressed a desire for clarity in the ways in which AI-based tools are developed and deployed; and still others, even those who possessed personal knowledge of the topics, conveyed unease about how AI/ML developments are speeding far ahead of regulation addressing privacy and transparency. At the same time, there was a general sense of the inevitability of continued AI/ML developments in the employment arena and, therefore, the need for I-O psychology to be deeply involved. We fully expect I-O psychologists to be involved in discussions and development of AI/ML employment tools in future years. Of utmost importance is that I-O psychology continues to work with other professions relevant to AI/ML and employment (e.g., lawyers, computer scientists, policymakers) to help ensure scientific integrity, effectiveness, and protection of human dignity and worth in the workplace. AI and ML are supposed to improve *human* resources, after all.

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President's Column

Tara Behrend

This issue of *TIP* is dedicated to Education and Training—one of my favorite topics and one that I have been thinking a lot about lately. One question that has been on my mind is, “What do we mean when we say that someone has been trained as a PhD-level I-O psychologist?” Do we mean

- The person has a PhD in Psychology from an I-O program in a psychology department?
- The person was trained by an I-O psychologist who works in a management department, so they hold a PhD in Management?
- The person has a PhD in Psychology from a psychology department with no formal I-O program, but does I-O-related work?
- The person has a PhD in I-O Psychology from a standalone continuing studies program?

I don't think most people would agree on the answer to this question. The implication of this issue is that we also don't agree on what a PhD I-O should be qualified to do or what they should know. SIOP's competency model for graduate training offers some guidance, but it is not sufficient to help us wrestle with these new realities.

SIOP has a responsibility to protect and support its members, and advocate on their behalf. Ensuring high-quality training is part of that responsibility, ensuring that the reputation of the field is one of methodological rigor, deep expertise in scientific principles of human behavior, and care for the well-being of workers. As our field grows in popularity, word of mouth is not a method we can rely on to establish norms and expectations for what an I-O psychologist is.

Ensuring high-quality training also means protecting prospective members who are the targets of predatory programs. These programs are growing dramatically in popularity and sell students false promises while leaving them with few skills and huge amounts of debt.^{1,2} Frequently these programs have no full-time faculty, and the faculty they do have are not trained in I-O themselves. Students do not take any doctoral-level coursework and instead take asynchronous online classes in huge cohorts with no research mentorship. A PhD is supposed to be a research degree, but these students graduate with no exposure to research at all. Many of them (over 30% by some estimates³) end up defaulting on the massive loans they had to take out because they can't find employment in the field. This problem is growing so severe that the U.S. Department of Education is implementing “secret shoppers” to catch for-profit colleges that pressure veterans to take out loans and lie to them about the expected returns.⁴ In addition to ruining these student's lives, this creates a taxpayer burden that we all pay for. It also damages the reputation of the field at a time when our expertise is widely sought after and increasingly externally recognized.

Is this what we want for students who are interested in I-O? Surely, it is not, but what can we do about it? SIOP is at a disadvantage; we are outmatched in size and budget by these corporations, who can devote millions of dollars to marketing (and influencing the state accreditation boards, in at least one case⁵). What we can do, though, is be very clear about what I-O graduate training should look like and to get that information into the hands of as many prospective students as possible. We can also collect better data from graduate program directors about their PhD programs, which SIOP will begin to do very shortly. **Clair Reynolds Kueny**, in her capacity as a subcommittee lead in the Education and Training Committee, and **./Steven Toaddy**, chair of E&T, have been doing amazing work in updating and expanding our capabilities in this area. By reporting acceptance rates, graduation rates, funding availability, and course rigor, programs can demonstrate their value to students more clearly and transparently.

We also need to recognize that these marketing efforts are appealing to people partly because their messaging connects to the needs of students in a way that traditional programs often fail to do. When comparing two programs, of course, the one that promises flexibility and acceptance will seem more appealing. Students are increasingly pursuing graduate studies while caring for children or parents and/or while working full time to support them. They may be transitioning from the military or coming back to school after many years away. Many of these programs explicitly target veterans and students of color.⁶ The late-night TV commercial that says “our program understands you and traditional programs don’t” resonates with students who feel left out and left behind. All I-O psychology programs should be attuned to the needs of students and provide authentic care, in the way those commercials pretend to do. Preparatory experiences like SIOP’s DIP program, or UNCC’s Organizational Sciences Summer Institute, are vitally important in providing that care and support, and much more is needed.

Training a new PhD properly is an enormously resource-intensive endeavor; it requires a significant investment of time and money from a university. It is not possible to train 10 (or 50) advisees simultaneously. This unfortunately means that the number of people who want to be admitted into doctoral programs will exceed the number of positions available; however, the solution is not to create huge, low-quality degree mills that guarantee 100% acceptance rates.⁷ Instead we should help people understand that a PhD is not needed or even desirable for many jobs a person may want to do. In a great many cases, MA/MS-level training is rigorous and top quality. Although it is true that some MA/MS programs are also predatory, enrolling in an excellent and reputable MA/MS program will almost always be better for a student than falling victim to a PhD scam. At the same time, we don’t have enough information about the current and future job market for I-Os. Has supply outpaced market demand? What will be the consequences, if so?

The bottom line is that we need to change the way we think about graduate education and recognize that a large and diverse group of students are drawn to a PhD in I-O psychology because it promises a good job and a better future. For the sake of those students, we have to do everything we can to ensure that those opportunities really are available to them, and that means making sure they receive the training they need and deserve. As SIOP continues to work on this issue, I would be happy to hear from people who have perspectives and experiences that they want to share.

Notes

¹<https://www.insidehighered.com/news/government/student-aid-policy/2023/05/18/new-stronger-gainful-employment-regs-released>

²<https://apnews.com/article/grand-canyon-university-fine-college-6728cbbc74912d96f1cf1c192780ae96>

³<https://www.ppsl.org/news/news/press-releases/new-data-96-of-students-defrauded-by-abusive-for-profit-colleges-waiting-for-betsy-devos-to-process-their-claims-report-their-lives-are-worse-off-now-than-before-they-went-to-school>

⁴<https://www.aeaweb.org/articles?id=10.1257/jep.26.1.139>

⁵<https://www.usnews.com/news/education-news/articles/2023-03-14/education-department-to-deploy-secret-shoppers-to-detect-predatory-practices-at-colleges>

⁶<https://www.republicreport.org/wp-content/uploads/2022/03/Manning-Adams-Takano-letter-to-ED-re-Keiser.pdf>

⁷<https://harvardlawreview.org/blog/2018/07/for-profit-schools-predatory-practices-and-students-of-color-a-mission-to-enroll-rather-than-educate/>

⁸<https://www.aeaweb.org/articles?id=10.1257/jep.26.1.139>

Max. Classroom Capacity: On Student Self-Assessment of Personality

Loren J. Naidoo, California State University, Northridge

Dear readers,



The theme for this issue of *TIP, I-O in the Classroom: Sharing Our Science via Pedagogy*, is a perfect match for Max. Classroom Capacity! When I reflected on what would be an appropriate column topic, my mind balked and wandered off, reminiscing about some of my experiences as a graduate student at Akron U. I had some great classes! One of my favorites was Dan Svyantek's Organizational Change and Development. Dan asked us to complete some playful, web-based personality surveys, which must have been quite new at the time. One purported to identify your spirit animal. My first result was something uninspiring like a rabbit, so I retook the test until I got an animal that I liked better (The tiger! Grrrr!). I also remember a Star Wars personality test that I was appalled (and a little proud) to discover had classified me as Emperor Palpatine. My kids love Star Wars and were delighted by this anecdote, and thus, a gimmick was born for this column!¹ Anyway, I think Dan's main point was to illustrate that we need to make sure to use our expertise as scientists in our work.

Everything is proceeding as I have foreseen.

This made me think about a recent episode in my own teaching. This semester I was asked to teach a first-year master's course in which the past practice had been to have students purchase and self-administer the Myers Briggs Type Indicator (MBTI) and discuss the results in a half-day workshop. I didn't love the idea given the uncertain reliability and validity of the MBTI (e.g., Randall et al., 2017) and because I thought "I'm an I-O psychologist—I can make my own personality test that students can use for free!"

Always in motion is the future.

Below I describe the steps I took to develop this new measure, administer it to my students, and run a developmental workshop on it. Toward the end, I discuss how to run this as an experiential learning activity for a graduate-level class in personnel psychology. In the age of ChatGPT, where written assignments are increasingly difficult to use as assessments of learning (see my previous column "[ChatGPT Shakes Up I-O Psyc Education](#)"), I anticipate a shift toward experiential activities—"doing stuff"—as a means of assessing student performance. Engaging students in the process of creating and validating a self-report survey of personality seemed like a great way for students to build I-O psychology skills. Going back to the theme for this issue of *TIP*, what better way is there to share our science than to "do" I-O psychology in the classroom with our students?

The Death Star will be completed on schedule...

The goal was to develop, administer, and interpret a self-report survey measure of personality to serve as the basis for a developmental workshop that was a mere 2 weeks away. As the dominant theory of personality, the five-factor model (FFM) seemed like a good framework for the new measure. However, I also wanted a tool modeled after commercial personality measures that are more prevalent in the work world. Therefore, I decided to model the new measure after the [Hogan Personality Inventory \(HPI\)](#), which is based on the FFM, but splits Openness (inquisitiveness and learning approach) and Extraversion (ambition and sociability) into two factors and includes various occupational scales (i.e., service orientation, stress tolerance, reliability, clerical potential, sales potential, managerial potential).

Do or do not. There is no try.

If you've ever developed an initial set of survey items from scratch, you know that this can be a lot of work. Writing items can be tedious and time consuming. Having a deep understanding of the construct of interest is necessary. Given the short time frame, I realized that I had to streamline my process. Therefore, I examined the [IPIP](#)'s existing, free personality scales and wrote a new set of items that were aligned with the dimensions of the HPI.² These were added to Qualtrics, and voila, *that thing's operational!* It was administered to students 1 week in advance of the personality workshop.

Now, you will pay the price for your lack of vision!

The next step was to develop a template for a report in which each student would receive their personality scores, as well as descriptions that would help them to interpret their scores, ideally providing some implications for their work performance as well. I had envisioned at least three "buckets" for each dimension: "high," "low," and "average." This is where I realized my first mistake: Developing items from scratch meant that there were no norms that I could use to help students interpret their scores. As a proprietary measure, the HPI doesn't appear to make normative data for their measure available to the public. So that left two choices: Choose groups based on arbitrary scale scores as cutoffs for high/low/average scores (e.g., averages below 2 and above 3 on a 4-point scale) or use 33rd and 67th percentiles based on the data collected from students. I chose the latter option.

It's not impossible. I used to bullseye womp rats...

The next major task was creating a template for the individual reports that would be sent to students. I wanted something that would look a bit like actual assessment reports that I've come across over the years. Commercial reports tend to include a few key features that I thought I could replicate. There were two aspects of the report template that needed attention: its functionality and its appearance. I needed a report that would automatically generate visuals based on each respondent's results. I also wanted the reports to look professional. With these goals in mind, I used MS Excel to generate a set of horizontal bar charts to depict scale scores and formatted the spreadsheet to look like a report when exported to PDF. I'm sure there are software solutions that would produce better looking reports than Excel, but I felt confident that I could get the functionality right, and that seemed more important.

The report template started with a description of the measure, a discussion of how scores are displayed and interpreted, and definitions of each dimension. Next the individual's scores on all scales were displayed as a set of bar charts showing their raw scores within the full ranges, along with a percentile rank. Then came "insights" pages where an "interpretation" blurb for each scale score described general score meaning, and an "implications" blurb described potential associations with work behaviors. For the occupational scales, a third blurb listed potential jobs/careers based on their scores.

The report template was populated by copying and pasting the respondent's name into the cell where the "Respondent:" was listed. This then served as the "lookup value" in a set of "VLOOKUP" formulas that pulled the given respondents' scores and percentiles into the template from a master database Excel file containing the raw survey data, which fed into the bar charts. By the way, if you're not sure what this formula is or how to use it, ChatGPT is a fantastic resource for explaining (and proposing) Excel formulas used to solve common problems.

Your feeble skills are no match for the power of the Dark Side...

One challenge was to write statements to help respondents interpret high, low, and average levels of each score. I took an initial stab at this and found that the high- and low-score statements were much easier to write than the average-score statements. But even so, after a while the text that I wrote sounded too formulaic and uninteresting. Being trained to write peer-review journal articles does not necessarily prepare you for writing for a more general audience!

So, I turned to ChatGPT to generate some content that I hoped would enrich my own writing. I asked it if it was familiar with the HPI (it was) and to generate interpretations of high, low, and average levels of each of the dimensions based on the extant literature concerning the HPI. With some more prompting around length and tone, it eventually produced content that gave me ideas for editing my own work. It was especially helpful in generating lists of potential job/careers based on occupational scale scores. An important caveat here is that it's not entirely clear from where ChatGPT generated this content (e.g., copyrighted material?), so I was very careful to use it as a source of ideas for what to write about rather than copying and pasting its content word for word. The final statements were uploaded to the master database Excel file and displayed in the template again using a combination of IF and VLOOKUP formulas (e.g., IF the percentile rank < .33 then VLOOKUP the "low" interpretation text for that scale, etc.).

Young fool... Only now, at the end, do you understand...

Recall that I started working on the report template about a week before the workshop. A few days before the workshop, I realized that manually generating a form for each of my 50 students, saving the template as a PDF, attaching it to an email, and sending the emails might take more time than I had left. Again, I turned to ChatGPT.

It's an older code, sir, but it checks out.

I carefully drafted a detailed prompt for ChatGPT that specified what needed automating (it's often worth the effort to be exceedingly specific to avoid troubleshooting later). I asked ChatGPT to write VBA code, the language that Microsoft products use to speak to each other, that would (a) copy the first name in the master database into the report template name field; (b) save the file in PDF format, including the student's name as part of the file name; and (c) repeat for the next student until none were left. This generated a report for each student in PDF format. Then ChatGPT generated VBA code that would compose an email (in MS Outlook), using each student's email address as provided in the survey, attach the corresponding report, with a subject line and email body, and repeat for all students. Then it helped me combine the two sets of code. Some troubleshooting was needed, but it was up and running in no time. Perhaps for some readers, writing such code is easy. However, as someone with close to zero knowledge of coding, being able to easily automate this process felt so empowering! It might not save a lot of time the first time you do it, but with some forethought and practice, many tedious and time-consuming tasks can be reduced to a few clicks on the mouse!

I'm looking forward to completing your training.

The workshop itself went well. Students appreciated receiving individualized feedback on their personalities and seeing how they compared with their peers. Describing the normative basis for high-/low-/average-score categories led to a stimulating conversation about the advantages, disadvantages, and implications of this approach. This progressed into a larger discussion of the principles of external validity,

reliability, and construct validity. The bulk of the workshop revolved around discussions of personal strengths and areas for development, and the implications of their scores for their semester-long work in small teams, as well as their work lives more broadly.

Perhaps I can find new ways to motivate them.

Although the exercise was a success, this project would work better as a semester-long project in a graduate class in personnel psychology or something similar. This kind of experiential learning exercise provides the opportunity for students to develop specific skills and experiences that will prepare them for aspects of I-O psychology work. With some guidance, master's students could carry out each step of the process. Readings could be assigned on item writing and personality (or whatever other construct they are interested in). Students could individually generate a pool of items and work together to pare them down. Students could help recruit a pool of undergraduates and/or work colleagues to take the survey. The question of how to norm scores and provide feedback is a great basis for a discussion on important psychometric principles. I'm certain students would create much more visually appealing and functional report templates than I did! Managing the survey data, calculating scores, running basic data cleaning and reliability checks, and figuring out how to pipe data into reports all would help them develop valuable data management and analytics skills. I think it's also important to teach students appropriate ways of using ChatGPT (e.g., coding, content generation). Validating the new measure might be difficult to do in one semester but would make an excellent project for subsequent semesters.

Your work here is finished, my friend.

As always, dear readers, if you have any ideas, comments, critiques, or just want to make a new connection, please email me at Loren.Naidoo@CSUN.edu.

Notes

¹ If you're not familiar with the Star Wars movies, my apologies—please assume everything that doesn't make sense (e.g., the updated headshot photo that my kids helped me photoshop) is an obscure reference to the movies. And it's probably time you watch the movies. At least the first three.

² OK, sure, this isn't the best way to write items, but it made item-writing doable within my time frame and also raised the odds that I would end up with something usable.

Reference

Randall, K., Isaacson, M., & Ciro, C. (2017). Validity and reliability of the Myers-Briggs Personality Type Indicator: A systematic review and meta-analysis. *Journal of Best Practices in Health Professions Diversity: Education, Research & Policy*, 10(1), 1–27.

There Must Be a Better Way: Presenting an Alternative to the Traditional Group Project

**Stephen D. Risavy
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Most of us have been there before: We describe our group project in the course syllabus and in our first class; we provide reminders throughout the semester. We might even have a few interim deliverables during the semester; however, our students avoid working on the project until the end of the semester, and when they do begin their work, they divide the work and each complete a portion of the project individually instead of working on it collaboratively. There must be a better way!

The purpose of this article is to provide a description of a novel alternative to the traditional group project that I have successfully implemented in three of my undergraduate-level courses: (a) human resources management; (b) recruitment and selection; and (c) strategic compensation. My alternative involves modifying a traditional group project in order to require students to complete their project work more regularly throughout the semester, to encourage greater student collaboration on their project work, and to foster more dialogue between educators and students regarding the application of course content. After applying this technique successfully across three different courses that are prevalent in I-O psychology, business, and management curricula, I am confident that any I-O, business, or management educator could also use this technique to modify an existing group project in a way that will avoid the issues of student procrastination and lack of collaboration while fostering more dialogue between educators and students.

In this article, I present (a) the theoretical and empirical foundation underlying my alternative to the traditional group project, (b) the steps required to modify a traditional group project, (c) an exemplar of a modified group project; (d) highlights of student experiences and perceptions of my alternative to the traditional group project; and (e) advice for other educators and trainers who are interested in implementing an alternative to the traditional group project. Overall, my approach can provide educators with an additional option that can be utilized to address issues inherent in traditional group projects while hopefully making the educational experience better for both I-O educators and their students.

Theoretical and Empirical Foundation

The first goal that I set out to accomplish was to encourage my students to work more collaboratively. Considering the pervasiveness of teams in the workplace (e.g., Forsyth, 2018; Kozlowski & Ilgen, 2006), it is important for students to learn how to work effectively with one another so that they can be prepared for the collaborative work that they will encounter once they join the workforce. There is also evidence in support of the positive impact that team-based work has on organizational performance (e.g., Guzzo & Dickson, 1996; Pulakos et al., 2019). Regarding the formative assessment literature, having more collaboration within groups is consistent with the key formative assessment strategy of “activating students as instructional resources for one another” (Black & Wiliam, 2009, p. 8). One issue with the traditional group project is that once a large group project has been assigned, students divide the work and then work independently on one part of the project. My alternative to the traditional group project recommends providing class time to allow students to work more collaboratively on their group project. Once I replaced the class time that I had previously used for group presentations with opportunities for students to work on their group project task for the week, I began to see much more collaboration between the students and less of the “divide and conquer” approach.

The second goal that I set out to accomplish was to have my students complete their group work on a more regular basis throughout the semester. It is unsurprising that task groups, such as groups of students working toward a collaborative assignment, often wait until the deadline approaches to complete the majority of the work. The punctuated equilibrium model (Gersick, 1988, 1989) suggests that groups working toward a deadline make little progress until at least the midpoint between when the task is assigned and when the task is due. “Engineering effective classroom discussions and other learning tasks that elicit evidence of student understanding” is another key formative assessment strategy (Black & Wiliam, 2009, p. 8). My alternative to the traditional group project recommends dividing a traditional group project into smaller deliverables that are due throughout the semester. When I started to divide my large group projects in this manner, I began to see students working on their group project more regularly while better realizing the connection between the class content they were learning and its practical application.

The third goal that I set out to accomplish was to allow for more interaction between myself and my students as well as for more opportunities for me to provide feedback to my students. Hackman and Oldham’s (1980) job characteristics theory prominently includes feedback as one of the five core job characteristics, emphasizing its link to intrinsic motivation. Having additional feedback opportunities is consistent with the key formative assessment strategy of “providing feedback that moves learners forward” (Black & Wiliam, 2009, p. 8), as well as the notion that providing students with feedback on their group project throughout the semester will allow them to make better decisions during subsequent parts of the project than if they had not received that feedback. My alternative to the traditional group project recommends providing feedback to the students both in class during the completion of the tasks as well as after each group project task is submitted. This modification resulted in not only having more opportunities to discuss the application of the course content with students but also enhanced students’ understanding of how to apply the course content and comfort with the material.

How to Modify a Traditional Group Project

If you are using a group project that is assigned at the beginning of the semester and is due at the end of the semester, then you will likely be able to modify the project in a way that will help with the aforementioned procrastination and lack of collaboration issues. In order to modify a traditional group project, follow these five steps:

1. Take the large group project and divide it into smaller task deliverables. Ideally, there will be a task for most of the weeks during the course. The idea is that when the students are learning particular content that is needed to complete part of a traditional group project, then a smaller task deliverable will be created related to that content for the students to complete and then submit directly after that content has been learned.
2. Create instructions, deadlines, and grade weightings for each of the group project task deliverables to be shared with students in the course syllabus and in class.
3. Structure the classes so that there is approximately 30 minutes available for the students to work on the group project task that is due for the corresponding weeks. Schedule this time for after the content has been presented so that the students can directly apply it to the corresponding group project task.
4. Create a rubric for evaluating the group project task submissions (or use mine! See Appendix 1).
5. After each group project task is submitted, use the rubric to evaluate the group’s submission, and post additional feedback comments before the students begin to work on the next group project task.

Modified Group Project Exemplar

I mentioned at the outset of this article that I have successfully implemented an alternative to a traditional group project in three of my undergraduate-level courses. Each initiative was slightly different; human resources management involved modifying a current event assignment and presentation project; recruitment and selection involved modifying a large group project; and strategic compensation involved modifying a simulation-based project. Perhaps most pertinent to demonstrating how my alternative to the traditional group project works, the recruitment and selection course modification is exemplified in the appendices, with Appendix 2 showing the original group project task instructions and Appendix 3 showing the modified group project task instructions.

As one example of how to take a large group project and divide it into smaller task deliverables, the Week 7 content for my recruitment and selection course focuses on recruitment source options, specifically their advantages and disadvantages as well as their appropriateness for different types of job openings. My original group project required students to include a recruitment plan (e.g., strategies to attract candidates, where they will advertise, a sample recruitment advertisement) with their final group project submission. My modified group project now requires students to submit an interim deliverable at the end of the week where they are learning about recruitment. The new deliverable asks them to identify appropriate external recruitment sources and to create an example of a recruitment advertisement for a specific job. Further examination of Appendices 2 and 3 can help to demonstrate other examples of specifically how I divided this large group project into smaller deliverables that were required to be completed throughout the semester as the content was being learned.

Student Experiences and Perceptions

Once I implemented my alternative to the traditional group project, groups were regularly working on and submitting their work throughout my courses. Further, I observed the groups working collaboratively in class on the assigned group project task for the week as opposed to the students dividing the work and having each student only be responsible for a specific aspect of the project. I also had much more opportunity to engage with my students, answer their questions, and provide them with feedback throughout the group project.

As further evidence of the success of my alternative to the traditional group project, I began to see several positive comments about the group project from my students on my end of semester course evaluations. Previously, I would typically either receive no comments about the group project or negative comments about the group project, the latter of which was part of my impetus for creating an alternative in the first place! Here is a sample of student comments from the most recent administration of my recruitment and selection course, which was in spring 2021 (delivered remotely):

- “I loved that we had time in class to work on the group project—it took an enormous amount of stress off and helped connect the material to the project more, since we had just finished learning about it and now had to apply it. Ongoing feedback on participation and group project tasks was timely and helpful.”
- “I liked that the group projects [*sic*] had small tasks that related to each week’s content.”
- “I love how the course is structured with participation marks and the project being split up into different tasks.”

And here are a couple of student comments from the most recent administration of my strategic compensation course, which was in winter 2023 (delivered in person):

- “I especially liked the format of the course where I got to apply my learning each week to a task within a group. This helped to advance my learning and gain a better understanding with my peers.”
- “I really enjoyed the structure of this course, in particular, the weekly Kahoots and the time we were given in class to complete group work. I also enjoyed how the group work was due weekly instead of as one large project at the end of the term.”

Advice for I-O Educators and Trainers

Regarding advice for I-O educators and trainers interested in modifying their traditional group project, here are some important lessons that I have learned for each of the five steps from the above “How to Modify a Traditional Group Project” section:

1. To help with the procrastination issue, I usually have a group project task for most of the weeks during my courses; the exceptions are usually the first and last weeks of the course and the week before the midterm exam. I sometimes also include a week off from the group project at some point in the semester. The ideal schedule will likely vary depending on the course content; for example, the schedule in Appendix 3 shows that for this 12-week course, there were no group project tasks assigned during weeks 1, 2, 5, 6, and 12 (the main content to apply in this course occurred during the second half of the course).
2. I usually include instructions such as the ones shown in Appendix 3 in my course syllabi, and I also include the instructions relevant to each week where there is a group project task in my class slides. I then elaborate on the instructions and discuss more specifics about my expectations when I introduce the task in class. For deadlines, I usually set the deadline for the end of the weekend after I introduce the task; the reason for this is so that anyone who has to miss class can still have the opportunity to contribute to their group’s work after class and before the end of the weekend. The ideal grade weightings will likely vary depending on the group project tasks that have been created; for some of my courses, I have them all equally weighted, and for others, such as the example in Appendix 3, the weightings vary depending on the complexity of the task and the amount of work required to complete the task.
3. To help with the group collaboration issue, I usually allow the last 30 minutes of my class time for the week for the students to work on the group project task for that week. I will allow more or less time depending on the complexity of the task and the amount of work required to complete the task. I am able to provide this in class time as I no longer require a group presentation from my students. This has been one of the most helpful modifications to my group project. For the students, this allows them to have time to work with their fellow group members without having to find outside-of-class time when they are all available, and it allows them to ask me questions as I circulate between the groups during this time so that they can revise their responses accordingly before submitting their work. This allows me to form better connections with my students, provide additional feedback, and ensure that they have comprehended the lecture information and understand how to apply that content. It is worth noting that this modification also worked well when teaching in an online modality by assigning each group of students to their own breakout room. I then circulated between the breakout rooms to see if the students had questions and to discuss their progress.
4. Usually, the students perform well on the group project tasks, but I do not think that I have ever had a substantive challenge to a grade that they have received. Part of the reason for this is likely the use of my general rubric that I use to evaluate each group project task submission (Appendix 1), the feedback that I am providing after each group project task submission (see the next point!), and the feedback that I am providing as I am circulating between the groups during their in-class time for working on the project.

5. After the deadline for each group project task has passed, and before the students begin to work on their next group project task, I use my general rubric to evaluate their responses, and I also provide more specific comments for any rubric criterion that did not receive a perfect score (i.e., I will provide them with additional feedback comments for each rubric criterion where they did not receive a 5/5). All of this is done through my institution's learning management system (LMS), which makes scoring the rubric, providing additional feedback comments, and uploading the grade for each group member seamless and efficient. I then often start the next class after a group project task has been submitted by inviting the students to share a highlight of their learning from the previous task, which allows us to revisit the previous week's topic before making the connection and proceeding to the next topic.

Conclusion

This article has presented what I have found to be a *much* better way of designing and delivering a group project in several of my undergraduate-level courses. Connected to the formative assessment literature (e.g., Black & Wiliam, 2009; Wiliam & Thompson, 2008), my alternative to the traditional group project will hopefully help I-O educators design and deliver group projects in a way that results in greater student collaboration and less procrastination while fostering additional educational interactions with their students.

If nothing else, our I-O community is unfailingly collaborative and supportive, so please feel free to contact me if you would like to discuss any of this in further detail or if you would like individualized advice for how to restructure your traditional group project: srisavy@wlu.ca

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Appendix 1 – Group Project Task Evaluation Rubric

Rubric Component	1	2	3	4	5
Task instructions were followed	<ul style="list-style-type: none"> Several components of the instructions were not followed 	Demonstrates performance in both 1 and 3	<ul style="list-style-type: none"> Some components of the instructions were not followed 	Demonstrates performance in both 3 and 5	<ul style="list-style-type: none"> Task instructions were followed perfectly
Response was comprehensive	<ul style="list-style-type: none"> Response did not demonstrate a comprehensive effort from the group 	Demonstrates performance in both 1 and 3	<ul style="list-style-type: none"> Response demonstrated a somewhat comprehensive effort from the group 	Demonstrates performance in both 3 and 5	<ul style="list-style-type: none"> Response demonstrated a comprehensive effort from the group
Content was applied correctly	<ul style="list-style-type: none"> There were several questions regarding the application of the content 	Demonstrates performance in both 1 and 3	<ul style="list-style-type: none"> There were a few questions regarding the application of the content 	Demonstrates performance in both 3 and 5	<ul style="list-style-type: none"> Content was applied perfectly

Note: For example, a score of 4 would correspond to a relatively minor issue, but instructions were otherwise followed completely (e.g., it was submitted late), whereas a score of 3 would reflect a more substantive issue (e.g., one of the assigned questions was not addressed).

Appendix 2 – Original Group Project Task Instructions for My Recruitment and Selection Course

To integrate course material, students are required to complete a comprehensive group project entailing the development of a selection system for a job and organization of your choice. Groups may use actual organizations and jobs; however, *the project must “create” a new selection system rather than describe an existing system.* The paper should contain:

1. A description of the organization. Indicate the industry, size, location, key product lines, financial status, vision and/or mission statement, values, key elements of the strategic plan, and specific HR policies/practices, including employment equity plans. (approximately 3 double-spaced pages)
2. A job analysis strategy. Describe the strategy that you would use to analyze the job. Include any questionnaires you would use and/or a detailed description of any techniques you would use. (approximately 2 double-spaced pages)
3. A comprehensive job description for the job. Indicate duties and responsibilities, reporting relationships, working conditions, supervisory responsibilities, as well as education, experience, required skills, and personality requirements. Be sure to indicate what features of the job are most important or critical. (approximately 2–3 double-spaced pages)
4. A recruitment plan. State what strategies you will use to attract candidates, including any special steps that you would take given your organization’s employment equity plan. Estimate the costs of your efforts (where will you advertise and how much will it cost) and indicate any specific procedures you will use (e.g., realistic job previews). You may include additional information, such as a sample recruitment advertisement. (approximately 3 double-spaced pages)
5. A description of your selection procedures. Outline ALL procedures that you will use to select applicants. You must include matrices that show (a) important job tasks (from the job description) X applicant KSAOs* and (b) KSAOs X selection tools that you intend to use. (approximately 6–7 double-spaced pages)
6. All reliability and validity information on selection procedures. Indicate known or estimated reliability and validity information (e.g., based on validity generalization or other similar studies). If you are lacking such information, describe how you could obtain this information in a study of your chosen organization. Be sure to indicate how your procedures meet existing legal legislation. (approximately 4 double-spaced pages)
7. An interview protocol. Provide a plan for interviewing candidates. Indicate the type of interview questions and format you will use. Provide examples of at least three interview questions and a detailed scoring key for evaluating each question and the interview overall. (approximately 2–3 double-spaced pages)

* KSAO = knowledge, skill, ability, or other characteristic/attribute.

Appendix 3 – Modified Group Project Task Instructions for My Recruitment and Selection Course

Week	Task	Weight
3	<ul style="list-style-type: none"> • Select an organization and a job in that organization. • Provide the justification from each group member regarding why you would like to study this organization and job—each group member should include their own reasons for why the organization and job have been selected. 	5
4	<ul style="list-style-type: none"> • Perform a job analysis for the job that your group has selected using the information from the “Getting Started: Gathering Job-Related Information” slides. • Be sure to include job description information, job specification information, reporting relationships, and working conditions. • Also note the most important and critical aspects of the job description. 	10
7	<ul style="list-style-type: none"> • Identify the external recruitment sources that should be used to generate a qualified and representative applicant pool for the job that your group has selected. • Create an example of a recruitment advertisement for the job that your group has selected. 	15
8	<ul style="list-style-type: none"> • Identify the minimum qualifications (MQs) from your job description. Next, decide how you will screen for those MQs. • Lastly, determine whether your screening methods have acceptable levels of validity (e.g., based on validity generalization or other similar information). 	5
9	<ul style="list-style-type: none"> • Identify the components of the job description that are the most important or critical for the job and that have not been addressed in your screening. • Next, decide which of those components can be tested for during selection. Finally, determine whether your testing methods have acceptable levels of validity. • The best way to complete this task would be to include matrices that show (a) important job tasks (from the job description) X applicant KSAOs and (b) KSAOs X selection tests that you intend to use. 	20
10	<ul style="list-style-type: none"> • Identify the components of the job description that are the most important or critical for the job and that have not been addressed in your screening and selection testing. • In addition, consider other noncognitive attributes that are likely to be important for your organization. Hint: look to their organizational values! • Next, create situational interview questions (p. 417; Table 9.1) and behavioral interview questions (p. 419; Table 9.2) for these job description components/noncognitive attributes. • Your group should create two situational and two behavioral interview questions. • Last, determine whether your interviewing methods have acceptable levels of validity. 	20
11	<ul style="list-style-type: none"> • Now that you have determined your screening methods, selection tests, and interview questions, how will you use the candidate data to make a final selection decision? Hint: look to the decision-making model options! 	5
		/80

Success Stories Implementing Open Science Practices Into Scholarly Activities: A Virtual Q&A

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Author Note: Thanks to **Cort Rudolph**, **Don Zhang**, and **Jonas Lang** for sharing their experience adopting open-science practices!

If you are interested in contributing to *Opening Up*, *TIP*'s column for all things open science, please contact christopher.castille@nicholls.edu. We are considering topics such as diversity and inclusivity, teaching open science, and areas where there may be value in spurring different kinds of replication projects (registered reports vs. registered replication reports).

Before we get into the republication, I would like to make a brief public service announcement. Andreas Schwab and I are starting a big team science replication initiative that services the broader management profession. The initiative is termed the *Advancement of Replications Initiative in Management* (<https://www.arimweb.org/>). ARIM promotes and supports replication research, particularly among early stage doctoral students working in management and adjacent areas (e.g., I-O psychology). We believe that embedding replication research in doctoral student training holds much promise for our science (see also Schwab et al., 2023). We are targeting our first set of publications for summer of 2024 and hope to pursue a publication at a top-tier journal shortly thereafter. **Larry Williams**, who is the director of the Consortium for the Advancement of Research Methods and Analysis (CARMA) will provide the infrastructure to support our initiative. If you too would like to support ARIM (e.g., review proposals; gather data, train, and mentor doctoral students), then please fill out this survey and help us out: <https://tinyurl.com/22jnkfw7>. We are actively looking for more collaborators!

Now, on to the Republication!

In this entry of *Opening Up*, I decided to republish this article highlighting how scholars in our field have put open science principles into practice in their work, particularly in the classroom. For me, this entry stands out because we have clear examples of scholars who rose to the challenge and advocated for making our science stronger and better. We highlight work by Cort Rudolph, Don Zhang, and Jonas Lang, who have been kind enough to share how they have incorporated open science practices into their scholarly activities. We will sample a body of the work they have opened up, take a look at some advice for adopting open science practices, point out interesting challenges, and whether adopting open science practices has caused them to rethink any assumptions about I-O psychology! Our virtual discussion was fascinating, and I hope you enjoy it!

Introducing Our Virtual Panel

Let's start with brief introductions. First up is Cort Rudolph. He is an associate professor of industrial-organizational psychology at Saint Louis University¹ where he studies the aging workforce, including applications of lifespan development theories, well-being and work longevity, and ageism. He is also consulting editor for *Work, Aging and Retirement* and serves on the editorial review boards of the *Journal of Managerial Psychology*, the *Journal of Occupational and Organizational Psychology*, the *Journal of Vocational Behavior*, *Consulting Psychology Journal: Practice and Research*, and the *Journal of Organizational Behavior*. He is committed to open science because he believes that making psychological science more transparent and accessible will maximize its impacts on society.

Next is Don Zhang. He is an assistant professor of psychology at Louisiana State University (LSU)² who studies judgment and decision making, risk taking at work, and how to better communicate research findings to consumers of applied psychology (e.g., managers, policymakers, executives). He serves on the editorial boards of *Journal of Behavioral Decision Making*, *Journal of Business and Psychology*, and the *International Journal of Selection and Assessment*. He is particularly interested in the role of open science in the classroom and ways to ease students into open science practices.

Last, we have Jonas Lang. He is an associate professor in the Faculty of Psychology and Educational Sciences at Ghent University and a research professor at the Department of Management at the University of Exeter where he studies adaptability, cognitive abilities, personnel selection, and the influence of motivation on performance. He currently serves as an associate editor for the *Journal of Applied Psychology*; he is also the editor of the *Journal of Personnel Psychology* and is on the editorial boards of *Psychological Assessment* and *Human Performance*.

A Virtual Q&A for Implementing Open Science Practices

As it pertains to open science, what body of your work would you like to highlight and what are you proud to say about it? Also, is there anything that drove you to implement open science practices with this particular body of work?

Cort Rudolph: I am proud of successes with open science on a couple of fronts: One of my proudest pieces of work is a meta-analysis published in the *Journal of Organizational Behavior* on “thriving” at work (Kleine et al., 2019). We preregistered our hypotheses and analysis plan, and as far as I know (at least at the time), this was the first preregistered project that *JOB* had published. Teaching wise, I try to push students to consider open science practice in various ways in all of my statistics and research methods courses (i.e., univariate, multivariate, SEM, meta-analysis). To this end, we talk a lot about “forking paths” in analysis workflows and the need to make these decisions explicit. I try to drive home the point that our culture prioritizes telling clean and compelling narratives over transparently communicating how an insight was generated. I also want them to see how we are still exploring new terrain rather than rigorously testing theory, and even here, preregistration is valuable (see Rudolph, 2021). Even in small ways I try to normalize the language of open science when teaching, too (e.g., instead of saying, “when making a hypothesis,” say “when preregistering a hypothesis”).

Regarding your follow-up question, as a meta-analyst, I always tell my collaborators that being a meta-analyst is like being a detective who investigated methodological/statistical shortcomings in the literature. It’s always interesting to see “what you find” when coding studies for a meta-analysis. In grumbling about this, it finally occurred to me, “Why don’t meta-analysts hold themselves to higher standards, too.”

Don Zhang: For 2 semesters, I incorporated open science into the lab component of my research methods course where undergraduate students worked in groups to conduct a real experiment (data collection and all!). To streamline the process, I gave them one of two papers to replicate as their in-class project. Thanks to the extreme efficiency of LSU’s IRB (at one point, I was PI on over 20 IRB applications simultaneously) and a team of hard-working TAs, the majority of the students were able to recreate the experiment, preregister it on OSF, obtain IRB approval, and collect/analyze real data. By the time I was done, I had over 10 groups that all conducted preregistered direct replications on what turned out to be a pretty influential prereplication crisis *Psychological Science* paper (Balcetis & Dunning, 2010), where the authors found that visual perception is influenced by top-down processes (e.g., motivation).

As luck would have it, the phenomenon we studied turns out to be quite controversial in cognitive science (Firestone & Scholl, 2016). Being an opportunist and an amateur cognitive psychologist, I saw a great opportunity for an actual paper, so I enlisted a star undergraduate student to help collate and meta-analyze the student replication data. We then conducted another high-powered replication study in my lab and wrote up results. The resulting paper is currently under review at *Cognition and Emotion*. It is one of my favorite projects to date, even though it has nothing to do with I-O psychology. I think the students also benefited tremendously in the process by seeing that even published research may not replicate!

Jonas Lang: One success story was a piece on modeling group processes like emergence and group extremity with multilevel models that we recently published in the APS journal *Advances in Methods and Practices in Psychological Science* (see Lang et al., 2019). My coauthors were able to convince the organization to allow us to post the data on the OSF (<https://osf.io/849kq/>). Because the paper is focused on teaching people a new technique, the availability of the data (and also the code) was really important for making the work understandable and usable for other researchers (they can run the analyses using the data themselves). Regarding your second question: I have been involved in methodological work for some time, and especially as an AE at *Organizational Research Methods* (a role I had before I switched to the *Journal of Applied Psychology*), I noticed papers that shared materials tended to be more popular with readers as well as reviewers.

Were there any resources that helped you to implement these practices in this body of work?

Cort: I echo the Open Science Framework (osf.io) as a wonderful resource to facilitate open science (especially data and material sharing), but also PsyArxiv (<https://psyarxiv.com/>) for posting preprints that are linked directly to OSF projects. I also use Github (github.com) for collaboration and hosting websites. I also want to mention that using open source statistics software, such that data and code that can be reproduced by anyone, is a key engine behind open science. Thus, R and RStudio are key resources for open science work. To this end, the ideas of “open” and “reproducible” science are, to me, inextricable.

Don: OSF is a great resource for students and myself. I also drew inspiration from a couple of great papers on open science and pedagogy (Chopik et al., 2018; Hawkins et al., 2018). One of my (and students’) favorite lectures drew heavily from Bill Chopik’s work. Most students have not been exposed to open science or the replication crisis. I think the lecture worked particularly well because college students still have a strong anti-establishment way of thinking, so stories about “bringing down the establishment” are naturally appealing to them I think. The Hawkins et al. paper outlined some great ways to involve undergraduate students in open science, and it was great knowing I’m not alone in recognizing the value of pedagogy in the open science movement.

Jonas: The OSF and related websites are certainly useful. I also tend to learn a lot about these initiatives at European psychology conferences and colleagues in other fields of psychology (especially personality and clinical).

Were there any challenges that you had to overcome to implement open science in this body of work and, if so, what helped you overcome these challenges?

Cort: I think this is still a pretty new space for a lot of people, and especially so in I-O, so my challenges so far have largely been in educating reviewers (and editors) about “why we are doing what we are doing” open science-wise (e.g., the value of preregistration, open data, and code, etc.). Still, and honestly this is a bit discouraging if I am being honest, what I have seen so far (especially with preregistration and sharing data/code) is that reviewers and editors often do not comment on this!

Don: I don't think what I did is possible unless you have an extremely efficient IRB system. At one point, the IRB administrator was reviewing over a dozen IRB applications and turning them around within 24 hours or less. Personally, my team of TAs and I had to manage over 20 IRB applications and tried to obtain approval within 2 weeks just so the students had enough time to collect data. It was very hectic and took a lot of coordination. Looking back now, I'm surprised it worked out so well!

Jonas: It is generally not easy to convince organizations to share their data. This was not European data, but normally I am based in Europe, and I observed that sharing data or making it available is challenging, particularly in Europe where General Data Protection Regulation recently made people very cautious sharing their data.

Did implementing open science practices cause you to rethink any assumptions in our field?

Cort: To some extent, yes. I see this as the future that our field is headed in. A lot of this open science "movement" has bubbled up from the credibility crisis in social psychology. I think at some level we all know that I-O is equally susceptible to such a crisis, and I would rather be out in front of this thing than lagging. I think as a field we would benefit greatly from being a bit more self-critical about what we know and how we know it.

Do you have any wishes regarding the adoption of open science in our field?

Cort: I think it's really important to recognize that open science is not a uniform prescription; it's not "one thing." Everybody can participate at some level in open science, and each incremental contribution thereto increases the broader credibility of our field as a whole. Moreover, there is not a one-size-fits-all approach to open science for each project; researchers can (and should) adopt principles of open science to the extent that they are practical and make sense for the goals of one's work.

Don: I wish editors and reviewers would all get on the same page about what "good" papers under this model look like and be more accepting of transparently flawed papers. I remember a story on Twitter where an author's paper was rejected because they preregistered their hypotheses. The reviewer noted that had the study *not been preregistered*, there was a way to reframe the paper to allow it to be published. I think this type of story makes it hard for early career authors to commit to open science. It is too risky for early career authors to play Russian roulette and hope to get the right editor/reviewers who will sympathize with open science, especially when getting the wrong reviewer means your paper may be punished instead. The incentive structure needs to be changed.

Jonas: I think our field in the past tended to sometimes (but not always) put the editorial shotgun on the author's chest and request, "For the revision to be successful, you need to show that there is a theoretical mechanism linking your predictor A to your outcome B." What should the poor authors do in a situation like this? I think there is real change, and the *Journal of Applied Psychology*, for instance, has a practice to not ask for new analyses per se but require some assurance that the particular finding is there. With open science policies in general, I think it is important that people can decide depending on their research context and research question and that we do not uniformly require everybody to do the same. In some research areas, it would not be wise to share everything. It would be quite unfortunate, for instance, if we forced assessment firms to share items for their instruments as they relate to employee selection. Forcing open science into practice in this manner might backfire for our field—we may not see research from

these organizations anymore. However, in many cases, something can be shared (e.g., covariance matrices) that can improve the science so long as we all take care that people get credit for their work.

What advice do you have to offer to scholars who are either on the fence about adopting open science practices or are just getting started?

Cort: Just dive in. There are simple steps that any researcher can do to implement open science into their work. For example, posting preprints ensures open access and takes less than 5 minutes. Another example is developing a simple preregistration. The templates provided by OSF make this fairly easy, but it's still a time commitment. Even easier, an <https://aspredicted.org/> preregistration can be completed in about a half an hour.

Don: I would love to see senior scholars model open science practices and advocate for open science in search committees, tenure evaluations, and publications. I would like all scholars to be more open minded about what a “good” paper looks like when they review papers and recognize that a lot more papers will not “look” as good in the superficial sense (clean story, supported hypotheses) if open science is successful, and not to punish authors for it. I think reviewers sometimes run into the “like goes with the like” fallacy where “good” papers look like other papers published in the same journals. But with preregistration, papers don't always tie themselves into a perfect bow, and reviewers need to recognize this. I think when incentives are aligned to promote and reward open science as much as they do novelty and “theoretical contribution,” junior scholars will respond accordingly. As any self-respecting armchair economist will tell you, people respond to incentives.

Jonas: I think there are clear benefits because it makes one's work more accessible. I think one concern that people tend to have is that some discussions around open science on social media and at some conferences were somewhat difficult for younger scholars. I think it is important that the community is critical about findings and data but always supportive of people and that the field develops a culture where it is fine to sometimes not be right or have different opinions.

A Closing Reflection

A round of virtual applause for our panelists! In reflecting on their responses to my questions, two themes stand out: the importance of educating others (e.g., editors, reviewers, students) about the value of thinking critically about our science and how implementing open science practices go above and beyond more traditional or conventional scholarly contributions in our field. Those with a penchant for leading by example may, I think, see quite a bit of value in incorporating open science practices into their work. Starting small, making incremental changes (e.g., preregistering a hypothesis), will make our science more transparent and accessible, enhancing the already excellent impact we are having on society.

Notes

¹ At the time of this current republication, Cort is now a professor at Wayne State University.

² Don is now an associate professor at LSU.

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Writing to Avoid Confusion: A Four-Level Framework With Examples

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In written communication, we generally seek to maximize clarity while minimizing wordiness and to maximize reader engagement while minimizing the amount of cognitive effort the reader needs to spend to understand our writing. If we match these various attributes to our reader's needs and to the level of criticality of each of these attributes, we can be effective in our communication. If we don't, however, we may lose reader attention early or in the middle of our writing, communicate imprecisely, and/or fail to get the core aspects of our message across. This article is designed to help you—a creator of written communication at any level but especially a student who is still developing their writing style in our field—organize thoughts in your writing in a way that may maximize avoidance of all forms of confusion on the part of your reader, in support of the cognitive-effort-minimization effort mentioned above. The purpose of avoiding confusion is to help your reader focus on, avoid distraction from, and understand the intended content of your writing. This article does so by presenting a four-level framework of writing styles, explaining how each may lead to or avoid confusion for the reader, and giving brief purpose-built examples of each of these four levels of writing. When you are done reading this article, you should be able to define each of the four levels of writing, to categorize examples of writing into each of the four described levels, and thus to assess the likely degree of confusion that a reader may experience when reading the passage in question. To achieve the article's initial, broader design of improving writing, it will be necessary for you to engage in additional practice with writing within these levels, evaluating where your writing falls among these levels, and reflecting on your beliefs about the acceptability of reader confusion; if you choose to use higher levels of writing in your own work, you should then be able to do so.

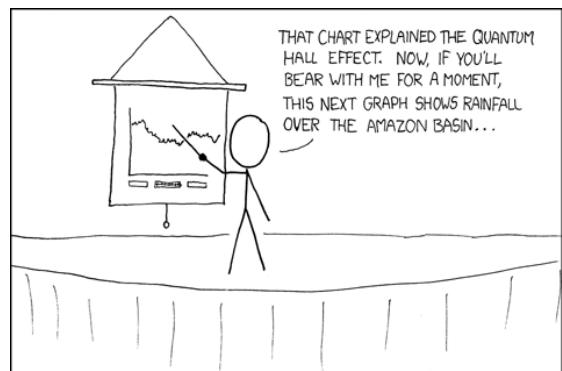
The Four Levels

These levels are organized such that higher levels are associated with higher quality writing, as defined by lesser amounts of confusion on the part of the reader. Note that some topics about which we are inclined to write are particularly counterintuitive and/or challenging to understand; this model only aims to avoid the confusion that can be attributed to organization of thoughts rather than to complexity or difficulty of concepts.

Level 0: Unmet Expectations

This level of writing is not given a positive-integer designation because it does not deserve the dignity of one. It is included here only to remind us that the writing that we encounter could always be worse and to set the baseline against which we compare higher levels, which can themselves still be confusing but for different reasons.

Definition: Level-0 writing causes the reader to develop expectations for what will come next in a document *but then does not deliver—immediately, soon thereafter, or ever—on those expectations*. It is the nonjoking equivalent of this (<https://imgs.xkcd.com/comics/slides.png>):



IF YOU KEEP SAYING "BEAR WITH ME FOR A MOMENT", PEOPLE TAKE A WHILE TO FIGURE OUT THAT YOU'RE JUST SHOWING THEM RANDOM SLIDES.

How to identify Level-0 writing: If you find yourself thinking, “Wait, what did the author mean by their reference to [topic x]?” immediately followed by “Wait a minute; the author is just moving on—what-ever happened to [topic X]?”, *and then, when you get to the end of the document and still can say “Wait, the author never went anywhere with [topic X],”* you are likely experiencing Level-0 writing.

Examples of Level-0 writing: Because this level of writing is characterized by the *absence* of a feature—namely, meeting reader’s expectation—a suitable full example would need to entail an entire written product (characterized by the lack of follow-up information) rather than an illustrative excerpt. What follows are thus just the initial sentences in which the reader’s to-be-unmet expectation may be generated (see italics), followed by a note that the expectation will not be met within the document¹:

- “Much of the research in this domain agrees on the hypothesized underlying mechanism, though recent work *has flatly contradicted that thinking.*” [At no point later does the author cite or discuss that contradictory work, nor do they evaluate the relative merits of the competing schools of thought.]
- “The reader is likely familiar with the five dimensions of personality contained in the big-five structure—Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism—*but few are aware of the next three dimensions.*” [At no point later does the author name the additional hypothetical dimensions.]

Level 1: Letting the Reader Sit With Their Confusion, Then Resolving It

This level of writing, like the two that follow it, contains all of the information that is needed to sate a reader’s curiosity. The amount of time between curiosity arising and curiosity being satisfied is the differentiator of these three levels.

Definition: Level-1 writing contains a statement that establishes an expectation on the part of the reader and then fails to meet that expectation immediately, leading to confusion and/or distraction for the reader. The author meets the expectation later in the document but not in the same sentence or in the next sentence.

How to identify Level-1 writing: If, as with Level-0 writing, you find yourself thinking, “Wait, what did the author mean by their reference to [topic x]?”, which is immediately followed by “Wait a minute; the author is just moving on—whatever happened to [topic X]?” The key difference for Level-1 writing is that by the time you get to the end of the document, you will have encountered appropriate coverage of [topic X]. In essence, there is resolution for the confusion, though not immediate.

Examples of Level-1 writing: In the examples below, note the separation between the cause of the confusion (italicized) and the quieting of it (underlined); the time that the reader spends between these statements constitutes the protracted state of confusion that characterizes Level-1 writing (emboldened):

- “Much of the research in this domain agrees on the hypothesized underlying mechanism, though recent work *has flatly contradicted that thinking.* **In this paper, we proceed on the assumption that the underlying mechanism is indeed the correct one, showing how the domain can be expanded into adjacent topic areas.** The contradictory perspective is based on the argument that none of the prior research shows any support for the assumed mechanism, and that new research supports the viability of a competing mechanism.”

- “The reader is likely familiar with the five dimensions of personality contained in the big-five structure—Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism—*but few are aware of the next three dimensions*. **Expanding our consideration of personality into this eight-component framework can greatly increase the predictive power of personality measurement in employment testing.** The three additional dimensions in question are grit, grote, and groot.”

Level 2: Psychic Confusion Detection

Definition: This level of writing carries the description of “Psychic Confusion Detection” because it appears to acknowledge and assuage a reader’s confusion as soon as it arises, as though the author was somehow psychic and read the reader’s mind. More concretely, Level-2 writing contains a statement that establishes an expectation on the part of the reader and then, in the very next sentence or within a later part of the same sentence, the author meets that expectation.

How to identify Level-2 writing: If, as with Level-0 and Level-1 writing, you find yourself thinking, “Wait, what did the author mean by their reference to [topic x]?” *but then, within the same sentence or immediately thereafter, you encounter an appropriate coverage of [topic X]*, you are likely experiencing Level-2 writing. More playfully, if you think, “How did the author know that I wanted to see an elaboration on or explanation of [topic X]? It’s like the author can read my mind!” you are likely experiencing Level-2 writing.

Examples of Level-2 writing: In the examples below, note that the cause of the confusion (italicized) still precedes the quieting of it (underlined); in Level-2 writing, confusion is extremely short lived but still present. See if you experience some version of the “Hey, that’s just what I was curious about! How did they know?” that puts the “Psychic” in this level’s name.

- “Much of the research in this domain agrees on the hypothesized underlying mechanism, though recent work *has flatly contradicted that thinking*. The contradictory perspective is based on the argument that none of the prior research shows any support for the assumed mechanism, and that new research supports the viability of a competing mechanism.”
- “The reader is likely familiar with the five dimensions of personality contained in the big-five structure—Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism—*but few are aware of the next three dimensions*. The three additional dimensions in question are grit, grote, and groot.”

Level 3: An Ounce of Prevention Is Worth a Pound of Cure

Definition: In Level-3 writing, expectations are met before they even arise, and confusion on the part of the reader is avoided entirely. The reader encounters the answer to a question before they even know that they have that question.

How to identify Level-3 writing: Following the framework used in this element of the descriptions of each of Levels 0 through 2 above, a reader may only realize that they’ve been consuming a Level-3 product if, upon reflection after reading the entire work, they realize that they have not once wondered where the author was going with a particular term or argument.

Examples of Level-3 writing: In the examples below, note that the prevention of the confusion (underlined) comes before the potential cause of the confusion (italicized). Sentences are also somewhat re-written to avoid introducing other sources of confusion:

- “Much of the research in this domain agrees on the hypothesized underlying mechanism, though recent work, based on the argument that none of the prior research shows any support for the assumed mechanism and that new research supports the viability of a competing mechanism, *has flatly contradicted that thinking.*”
- “The reader is likely familiar with the five dimensions of personality contained in the big-five structure—Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism—but here we introduce the reader to three additional dimensions—namely, grit, grote, and groot—*that fit into and expand the model.*”

Closing

Some of the written works that we consume in our field present subtle and complicated arguments that call on a reader to remain focused and to hold many different narrative threads in mind at once. On the assumption that confusion will interfere with a reader’s ability to easily comprehend a written work, this article submits a structure to identify one source of confusion—distracting expectations—and to take steps to identify and eliminate it. The examples presented here are largely out of context, purpose built, and silly; they do not capture the difficulty that a writer will face in trying to strike the challenging balances—those mentioned at the start of the article between clarity and wordiness, between engagement and cognitive ease, and many others not mentioned in this article. They are designed to give authors a framework in which to consider the impact of each of their sentences or statements.

The article is oriented toward authors, but it is also intended to give editors/reviewers a way to put their finger on how and why they are confused and how to communicate with the original author about this and how to improve their writing—perhaps simply by pointing that author toward this article.

Below is a simple table that may serve as a helpful reminder in applying these concepts.

	Level of writing			
	Level 0	Level 1	Level 2	Level 3
Does reader experience confusion?	Yes	Yes	Yes	No
Is the confusion resolved within the document?	No	Yes	Yes	N/A
How soon is the reader’s confusion remedied?	Never	Eventually	Immediately	N/A
How to move to the next level of writing?	Actually resolve the confusion at some point.	Resolve the confusion immediately instead of waiting.	Prevent the confusion entirely rather than resolving it immediately.	N/A

Note

¹ Please remember that all examples in this article are simulated for the purpose of illustration and do not intentionally reflect accurate claims about our field.

From Grad School to the Real World: Three Perspectives on Essential Skills

Steven Zhou, Bharati B. Belwalkar, & Lisa Kath

In the ever-evolving landscape of higher education and the professional world, the transition from graduate school to the workplace can be both exhilarating and challenging. In this *TIP* article, we are privileged to share our perspectives on crucial skills we wished we had honed during our academic pursuits. Each of us brings a unique viewpoint based on our own experiences. Join us as we delve into our collective journey and discover the lessons that will hopefully tweak (if not shape) your approach to education and career development *if you are a student or early-career professional* and to curriculum designing and training *if you are an educator*.

Who Are We, and What Do We Wish to Talk About in This Article?

Steven Zhou, MA, is a PhD candidate in industrial-organizational (I-O) psychology at George Mason University and a Survey & Measurement Methods lead at Purdue University. Besides research on leadership, psychometrics, and the academic–practitioner gap, Steven is passionate about teaching and pedagogy; he received the 2021 Outstanding Graduate Student Instructor award for his redesign of the undergraduate statistics curriculum. As he began teaching and applied work while finishing his PhD, he quickly realized that **public speaking** is one of key skills for which students are not intentionally and adequately trained. Steven’s public speaking experience stems from competitive speech and debate in high school, for which he served as the president of his school’s 150+ student team, which consistently placed in the top 1% in the nation. He has also taught and coached competitive public speaking and debate in the years since graduating, and recently he was a top eight finalist in the 2022 APA Psych Science-in-3 speech competition and the first-place winner of GMU’s Three Minute Thesis competition.

Bharati B. Belwalkar, PhD, PMP, is an I-O researcher at the American Institutes for Research (AIR). At AIR, Bharati has been leading various short-term and multiyear projects as a project director and/or task lead; she previously worked with local government agencies where she predominantly led medium-to-large-scale projects related to assessment development. Soon after entering the workforce, she realized that **project management** is a key skill that anyone, irrespective of their academic or applied focus, should invest in learning. Bharati, therefore, earned her Project Management Professional® (PMP®) certification offered by the Project Management Institute (PMI). She is a member of the Project Management Academy, a professional learning community and a PMP certificate-prep group at AIR, which hosts annual bootcamps for junior and senior researchers wanting to get PMP certified, get continued education (CE) credits, and/or lead consulting projects at AIR. Being able to manage (a) multiple moving pieces of a project, (b) team members responsible for those pieces, and (c) client requirements are an inevitable part of applied I-O work, and therefore, she thinks that it will serve students well if they learn project management skills early in their careers.

Lisa Kath, PhD, is an associate professor in I-O psychology at San Diego State University. Lisa teaches/mentors both undergraduate and master’s level students in I-O psychology, and with her students, she conducts research on workplace safety and stress, most recently in children’s hospitals in the U.S. She loves occupational health psychology’s focus on worker well-being, and she has served as the president of the Society for Occupational Health Psychology. As an educator and proponent of occupational health, Lisa understands that the need for building eminence of I-O psychology starts with educating non-I-Os about what we do, and **social media** related skills play a huge role in this area. Moreover, it

helps build a personal brand. Lisa, therefore, runs the @iopsychmemes account on Twitter (4000+ followers), Instagram (7000+ followers), LinkedIn (2000+ followers), and Facebook (1000+ followers). She is connected to many I-O psychologists on those platforms with her personal account as well, and she occasionally contributes to responses on the r/iopsychology subreddit.

In summary, public speaking, project management, and social media marketing skills are critical to success as both an I-O academic or practitioner; for example, public speaking is vital for conference or report presentations, project management is vital for juggling research projects or consulting contracts, and social media is vital for publicizing research findings, networking, and recruiting new clients. We turn the spotlight on these professional skills that we argue are critical to success as an I-O academic or practitioner yet are left out or underemphasized in most I-O graduate programs.

Why Do We Think These Skills Are Important?

The SIOP Guidelines for Education and Training (SIOP, 2016) provide an excellent summary of the core competencies for any I-O graduate. Fourth on the list are a set of professional skills such as communication and project management. However, these professional skills are often integrated into the curriculum of other content courses; rarely are they given a spotlight with explicit instruction and dedicated curriculum. Relative to the crucial content areas of knowledge that I-Os must graduate with expertise in, it is understandable and reasonable for such professional skills to be underemphasized in I-O curricula.

We believe that everyone would agree that project management is important to success in 21st century I-O careers, but, for example, students generally are not taught the leading theories of lean and agile project management or the appropriate software such as Asana and Notion. Likewise, everyone would agree that verbal communication is important, but rarely are students given explicit instruction in the strategic use of verbals (e.g., varying pitch and pace) and nonverbals (e.g., hand gestures and footwork) in public speaking. Finally, although everyone would agree that I-Os need to do a better job of sharing their work publicly and impacting a broader audience, few courses are dedicated to teaching best practices in engaging social media (e.g., timing and location of posts) and software (e.g., Buffer).

Public Speaking (Steven Zhou)

Ingraham (2014) reports that the number one greatest phobia is public speaking, with 25.3% of Americans reporting a fear of public speaking, even higher than the percent afraid of heights, bugs and snakes, and drowning. I can relate. Back in elementary school, I was encouraged to run for fifth grade class president, only to quit in terror when I found out I would have to give a speech at a class assembly. But fast forward a few years, and I somehow found myself invested in competitive speech and debate as my main extracurricular activity all through high school. I was lucky enough to be in a massive team of over 150 students, and our team consistently ranked in the top 1% in the nation. To this day, I look back at my experiences competing on the team, serving as its president, and later coaching/instructing teams as foundational to my interests today in teaching courses and giving research presentations.

One key takeaway from these experiences is that public speaking can be taught and practiced. Certainly, there is the initial fear to overcome. However, too often, there seems to be an assumption that graduate students will just "figure it out" when it comes to public speaking. Some programs give excellent instruction in how to teach a class, but such instruction (rightfully) focuses on curriculum, managing students, grading, and other teaching strategies as opposed to the core skill of public speaking. The result? I have heard far too many lectures or presentations that drone on for far too long, lack any variance in

tone or speed, show little to no planning in footwork or hand gestures, and either sound like they are reading off a script or rambling without a clear direction. Perhaps that was too harsh, but I am confident that most of us have experienced at least one, if not many, of such presentations.

Engaging in public speaking is critical to success as an I-O academic or practitioner. An hour (or more) is a long time for today's students to pay attention during a lecture, yet a skilled public speaker is able to keep the audience engaged for far longer than the average attention span. Faculty can have the most organized, instructive, and engaging assignments or curriculum, but a poorly delivered lecture will still be a major roadblock in student learning (Li et al., 2016; Mowbray & Perry, 2013). Likewise, practitioners must regularly give presentations of research findings or consultant reports. An engaging presentation can make or break a massive consultancy contract. More generally, verbal communication is usually the number one most valued skill for any employer, even above teamwork and problem solving (NACE, 2016).

Although there are ample coaching and teaching resources on competitive public speaking, I recommend actively seeking opportunities that would give hands-on practice in preparing for it. Typically, public speaking involves taking an existing topic, walking through the process of planning how one might deliver the presentation, and practicing it. For example, one exercise used early on in a public speaking curriculum would be to read an existing short speech. This allows one to focus on their delivery skill, both in their verbals (tone, intonation, pace, pitch, and timbre) and in their nonverbals (eye contact, facial expressions, hand gestures, footwork, and use of the stage). Being able to evaluate one's own and others' public speaking on these detailed verbal and nonverbal criteria, among others (e.g., use of filler words), is also a critical element of public speaking. All it needs is initiative, dedicated practice, and some intentional public speaking exercises and lessons in the graduate school curricula!

Project Management (Bharati B. Belwalkar)

Project management has always been practiced informally but began to emerge as a distinct profession in the mid-20th century (Larson & Gray, 2015). The PMI defines project management as the application of knowledge, skills, tools, and techniques to project activities to achieve project requirements. It is accomplished through the application and integration of the processes such as *initiating, planning, executing, monitoring, controlling, and closing*. It is, therefore, not surprising that an increasing number of organizations are turning to project management as a specialized practice for consistently delivering business results and to consequently stay ahead of the pack in the global economy. Every job, therefore, has some elements of project management, and most people (like myself) learn project management skills on the job (Thamhain, 1991). Take our I-O work for example! When an I-O psychologist offers professional consulting services to a client (as an external consultant) or to an organization (as an internal consultant), they have to—knowingly or unknowingly—use project management strategies and techniques. Indeed, “one cannot be a successful consultant unless one is a successful project manager” (Jeanneret, 2008; p. 215).

As both an internal and external consultant, I have led/managed multiple medium- to large-scale projects for a variety of clients and have had to wear many hats in the process: planner, communicator, delegator, problem solver, quality controller, to name a few. I hope this gives you a sense of the various roles any project lead has to fulfill, often simultaneously! Although I did receive some lessons in project management during graduate school, most of my training in this area was on the job. Subsequently, studying to get a PMP certification helped me understand the theoretical bases of project management. I would like to see more intentional education and training of project management in the context of I-O psychology, though. Additionally, topics like project teams are important for smooth functioning of any

project (Heagney, 2016); therefore, I think educators could intentionally discuss how traditional I-O topics (such as leadership, employee attitudes) are related to the stages of project management. After all, quoting a noted project management expert, Cornelius Fichtner, I say: “The P in project management is as much about *people* management as it is about *project* management.”

To help understand the key concepts of project management, educators could encourage students to practice project management on their I-O “consulting” projects. If a real-world consulting project is not available, hypothetical case studies could be used to walk students through the standard process from the beginning (scope) to the end (closing out) of the project. With respect to early-career professionals, I acknowledge that asking your employer or self-sponsoring a project management training/certification may be cost and/or time prohibitive. But there are a plethora of online resources, practical guidelines, and tools to help you learn project management from planning to completion. If nothing else, it will teach us to think in terms of different elements of any project (i.e., scope, quality, risk, cost, timeline, and key stakeholders) and slowly, eventually, “agile” and “waterfall” will not be jargon anymore!

Social Media (Lisa Kath)

There are three primary reasons that I-O psychologists may want to get involved in social media: (a) helping to close the science–practice gap by sharing empirically based recommendations with organizational leaders, (b) reaping the benefits of being an active/interactive member of the I-O psychology community, and (c) engaging in outreach about I-O psychology as a field and potential career. Yes, there are other ways to achieve these goals, but social media can be an effective, efficient, and (dare I say) fun way to engage with a wide variety of people in ways that benefit yourself and others.

To start, I would recommend that people who are new to a social media platform start small. I like to train the algorithm by being generous with my “likes,” teaching each platform what I would like to see more of. Then, when my feed is curated so that I can see what I want to see, I observe the behavior of active participants to get a better idea of how people on that platform engage. I might graduate to commenting on posts and then try out making some posts.

Social media is everywhere, and it comes in a lot of different varieties to suit different needs and personalities. My anecdotal experience of the different “personalities” of social media platforms comes from the engagement metrics for memes that I post across these platforms. I post the same meme across all platforms, at the same time, on the same day, and the meme may be very popular on one platform and much less so on another. Given the different personalities of social media platforms, a second, “take-home” point is that it is vitally important to align your purpose with the platform(s). Go where you feel comfortable because that’s where you’ll be the most authentic. And if there’s anything that I think is a common thread across social media platforms, it’s that people tend to respond positively when they get a sense that you are being authentic.

To start, follow a simple process: create, schedule, and post memes on your social media account(s) that could include some conceptual advice for good science communication or some tangible advice on the various ways to make memes (i.e., using your smartphone’s photo editing capabilities, using apps or websites designed for this purpose) and using scheduling services (I have used Hootsuite and Buffer in the past). This mini activity will help you pick up some tips on the decisions you will need to make and the tools that may be available to help you engage effectively on social media.

Finally, I would offer the same advice to you that I offered to my kids when they were getting started on social media: check in with yourself when you're done engaging and ask yourself, do you feel the same or better than when you started, or do you feel worse? If you feel worse, is there a change you can make to improve your experience? If not, get out. Social media is not required to be successful in I-O psychology (or elsewhere in life!). But, as I noted earlier, it can be an effective, efficient, and fun way to share our knowledge, commune with like-minded folks, and engage in outreach for our field. I would love to see more I-O psychologists using social media in creative ways toward these aims.

Our Concluding Thoughts

In our collective journey from graduate school to the professional world, we've shared our perspectives on these three essential skills that we believe deserve some emphasis in academic and professional development.

1. Public speaking is not just about conquering a fear but mastering a crucial skill that can captivate audiences, enhance communication, and boost career prospects. As both educators, students, and practitioners, investing in public speaking training can lead to more engaging lectures, presentations, and client interactions, ultimately fostering a more impactful educational and professional environment.
2. Project management, often learned on the job, is an indispensable skill that permeates every facet of our careers. Learning project management early can help students excel in their roles as internal or external consultants, facilitating smooth project execution, client satisfaction, and career advancement. By incorporating project management principles into I-O psychology curricula, educators can equip future professionals with the tools they need to thrive.
3. In today's digital age, social media is a powerful tool for I-O psychologists to bridge the science–practice gap, connect with their community, and amplify their influence. Embracing social media with authenticity and purpose can lead to more effective knowledge dissemination, networking opportunities, and a stronger presence in our field.

As we conclude, we invite students, educators, and early-career professionals to consider these skills seriously and find ways to develop them in their academic and professional pursuits. They can not only enhance your professional journey but also contribute to the broader impact of I-O psychology at work and outside.

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The Disconnect Between Science and Practice: Concerns of Graduate Students

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Meta**

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Many enter the field of industrial-organizational (I-O) psychology in order to drive change and improve the workplace for employees. However, many students feel that there is a major disconnect between their day-to-day activities as a master's or PhD student (e.g., reading research papers, collecting data, writing journal articles) and the actual implementation of theories into practice. The divide between science and practice in I-O has long been noted and discussed (e.g., Cascio & Aguinis, 2008; Dunnette, 1990; Hakel, 1994; Rynes, 2012). This prominent challenge is highly apparent to us as a current I-O PhD student (Sijan) and a recent I-O PhD graduate currently working in industry (Sophie). In this article, we focus on the graduate student perspective on this divide. We briefly discuss the concerns of students and share ideas on how to bridge the gap between these two areas.

Graduate Student Concerns

Due to the extensive divide between science and practice, many I-O PhD students often find themselves ill prepared, or at least anxious as to their readiness, as they graduate and transition into industry. Considering the current global economic landscape and the competitive job market, it becomes imperative that I-O programs equip their students with the essential experiences and KSAOs necessary to not only prepare them for the industry but also empower them to become valuable contributors capable of driving meaningful organizational change.

Sijan's Perspective as a Current PhD Student

As a current second-year PhD student, my first concern revolves around the balance between theory and practical knowledge in I-O education. In the classroom setting, I often find myself immersed in theories, needing to digest a significant number of scientific, peer-reviewed articles. It's unclear how much of this extensive information we are expected to retain. It seems fairly common that program curricula do not differentiate between the most crucial concepts and the less relevant or outdated ones, which could lead students to investing a lot of time in information that may not be critical for industry roles. For example, there are a large number of leadership theories in current literature, each offering a different perspective. It's challenging to figure out which of these theories are actually applicable for improving leadership in practical, real-world situations.

In my statistics class, I am learning complex concepts like multilevel modeling, Bayesian statistics, and machine learning. Although these are undoubtedly valuable, I've heard some industry professionals suggest that the basics, like correlation, *t*-tests, and ANOVA, are what truly matter in daily work. Yet, job postings often request experience with more advanced statistics. I have also heard from practitioners that the "cleaner" datasets we practice with in an academic setting tend to differ (by a large margin) from messier real-world data. I often worry that my experience with academic datasets will not prepare me well for an industry role. Additionally, many positions require several years of experience, leaving me to wonder if I'm underqualified to secure my job of interest immediately after completing my PhD program.

Finally, I am worried that there are so many potential career paths within this field that I may not discover my true passion until I'm actually working in the industry. Although I have a general idea about my career interests, I often tend to question it. I am also grappling with the question of whether to become a generalist or specialize in a specific area. Furthermore, I am also concerned that I-O psychology might still not be widely recognized in the business world, potentially putting us at a disadvantage when competing for positions against MBA graduates or data scientists.

Sophie's Perspective as a Recent Graduate

During my own PhD program, I had been undecided on academia versus industry. I was lucky enough to intern at two different *Fortune* 50 organizations (State Farm and Facebook) during the summers following my third and fourth years of graduate school. These opportunities led me to my current role at Meta (formerly Facebook) on their People Analytics team. Although I only completed my PhD 4.5 years ago, I recently realized I have a useful perspective around the transition from academia to industry. More specifically, I began mentoring a group of graduate students through my involvement in [Asians in I/O](#) earlier this year. After a few months into mentoring and a handful of LinkedIn messages from strangers asking to chat one on one, I realized a lot of students had similar questions and concerns. I decided to post on LinkedIn to field questions in an attempt to consolidate questions and post answers publicly. The response was overwhelming. I received almost 300 reactions to my post, over 100 new connection requests, and dozens of comments and direct messages with questions and requests to chat.

Through these interactions, it became clear that there is a gap in self-efficacy in the transition between academia and industry. There are largely three common themes to my conversations: (a) what my daily life and career development look like as a practitioner, (b) what skills to focus on to get jobs, (c) clarity on whether they are getting the training they need for industry. Many are worried about their skill sets and doubt their abilities because they do not know much about industry jobs. Honestly, I felt the same when I started my first internship. I believe there is a lot we can do to better prepare and support graduate students while simultaneously building more and stronger connections between academics and practitioners.

Bridging the Gap for Students

Of the aforementioned articles that have written about the scientist–practitioner gap, all have discussed potential solutions (e.g., Aguinis & Cascio, 2008; Cascio & Aguinis, 2008; Rynes, 2012). However, none are focused solely on the student perspective. We propose a handful of ideas at different levels (student, professor, program, and SIOP) to reduce the scientist–practitioner gap with a focus on graduate students.

Student Level

Internships to acquire real work experience are the most obvious path for students to pursue to prepare themselves for industry jobs postgraduation. Although summer internships offer valuable insights, their brevity limits the depth of experience gained. Encouraging part-time, year-long internships within the I-O curriculum would undoubtedly enhance students' readiness for the industry. This would be particularly useful for students who are unsure whether they want to go academic or applied at the time of applying for graduate school.

Furthermore, the establishment of in-house consulting clubs or groups led by students (and supervised by faculty) could prove highly beneficial. These student-driven organizations can offer students the opportunity to gain leadership experience, tackle real-world problems informed by their classroom learning, and

refine their communication skills through interaction with various stakeholders. However, it's crucial to emphasize that building and sustaining such clubs may require university support and resources. Notably, institutions like Columbia University and Montclair State University (and others) have successfully established such clubs within their I-O programs, setting examples for other universities to follow.

Additionally, universities can explore mentorship programs, where students are paired with alumni who can provide guidance and offer mock projects that simulate real-world scenarios without breaching any organizational confidentiality. Although this concept may seem ambitious, the establishment of such systems would undeniably contribute to the growth of the I-O students by bridging the gap between academia and industry.

Professor Level

We believe it is essential for individual classes to incorporate a practical element. For instance, final projects could involve crafting real-world solutions for organizations, such as designing selection systems, assessing whether adverse impact has occurred, or devising performance management strategies. Although some I-O professors undoubtedly do this already (e.g., Motahari et al., 2023), they may not require students to deliver presentations or create documents for nontechnical audiences. This is an aspect we believe professors should consider, potentially even inviting industry-based colleagues to help review and provide feedback.

Program Level

Undoubtedly, I-O programs could benefit from hiring faculty members or adjuncts with applied experience. At a smaller scale, departments, programs, or individual professors could invite practitioners as guest lecturers or colloquia speakers and have them lead workshops on their expertise, as done by organizations like METRO (New York Metropolitan Association of Applied Psychology). To address logistical challenges for students, localizing such events and integrating them into the program curriculum will maximize benefits.

Additionally, we believe I-O psychology programs should actively encourage student involvement in volunteer opportunities. This will not only enhance the influence of the I-O community on society but also will offer valuable training for aspiring I-O psychologists (Albritton et al., 2023). Collaborating with organizations like Volunteer Program Assessment (VPA), which provides volunteer programs for organizational effectiveness in partnership with eight universities, can be a strategic way for I-O programs to foster such engagement (Albritton et al., 2023).

SIOP at Large: Sophie's "Pie in the Sky" Idea

One opportunity I identified as a PhD student was the need for students to acquire data for their research and the number of organizations that could benefit from I-O. It seemed like a win-win situation that could truly benefit both parties! I always wondered if students might be able to obtain applied data for their master's theses and dissertations by connecting with local organizations, ideally with a stipend. A few of my classmates were able to collect data or use archival employee data through internships, but this was rare. Further, some professors warned against this due to the additional hoops needed to jump through and potential lack of control (e.g., limits to survey items or length).

My “pie in the sky” vision is that a central group of I-O psychologists, perhaps through SIOP or the SIOP Foundation, build relationships with nonprofits and small businesses that cannot afford I-O consulting but are open to data collection within their organization. Students conduct the applied research and use the data for master’s theses, dissertations, and other academic pursuits. As mentioned in Tippins et al. (2023), nonprofits and small businesses may be more inclined to share the details of successful programs compared to organizations that see these programs as a competitive edge. This said, students and their advisors could publish the findings, further advancing I-O as a science. Much of the research done within organizations to date remains concealed due to competition, legal risk, and concerns of public reputation, which is arguably limiting advancement within our field.

Although academic faculty can certainly provide some guidance to students doing this work, they may not have the full skillset to conduct applied research or implement changes in an organization. Experienced practitioners are the ideal candidate to mentor students from a skillset perspective. Although working practitioners have limited time, Tippins et al. (2023) highlights that there are I-Os willing to volunteer their time to support charitable organizations. This would be a fantastic learning opportunity for students interested in industry, producing datasets from a variety of workplaces that would help advance science while benefiting organizations at a low cost. Getting this initiative underway and eventually to scale would be challenging, but I believe it would be beneficial for students, their professors, mentors, small businesses and nonprofits, and I-O as a science.

A related endeavor that I have been involved in outside the I-O space is the PSEG Institute for Sustainability Studies’ Green Teams program. This program provides training and guidance for teams of five students to address sustainability issues identified by host corporations, organizations, nonprofits, municipalities, and community groups over a period of 10 weeks (see Kay et al., 2018 for further detail). This partnership between academia and business provides a valuable opportunity for students to learn hands-on in a business setting while under the supervision of a leadership team. The collaboration with organizations allows students to learn firsthand how businesses function, gain experience in an applied context, and develop a variety of skills such as teamwork, communication, presenting, and writing. I believe a similar model at the graduate level could be adopted by SIOP, perhaps first as a summer pilot and later into longer term projects.

We recognize that equipping I-O students with practical, real-world experience is undeniably challenging. However, we believe the benefits would extend not only to the students themselves but also to their professors, practitioners, and the broader I-O community. We hope this article was thought-provoking for students, professors, and practitioners. If you have comments, ideas, concerns, or respectful disagreements, feel free to send us a message on LinkedIn ([linkedin.com/in/sophieikay](https://www.linkedin.com/in/sophieikay); [linkedin.com/in/allamaikbalsijan/](https://www.linkedin.com/in/allamaikbalsijan/)) or email (drsophieikay@gmail.com; sijana1@montclair.edu).

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How Local I-O Groups Enrich Graduate Student Educational Objectives

Maryalice Citera, Robert Calderon, Bill Handschin, and Donna Sylvan

As members of SIOP's Local I-O Group Relations Committee, we wanted to explore how local I-O groups enrich graduate student educational experiences. We interviewed or asked individuals to respond by email to a set of five open-ended questions. We had a total of eight individuals respond who were either current graduate students or recent graduates from both master's and PhD I-O programs. They represented three different local I-O groups: Georgia Association for Industrial and Organizational Psychology (GAIOP), The Personnel Testing Council Metropolitan Washington (PTCMW), and Minnesota Professionals for Psychology Applied to Work (MPPAW).

Connecting the Classroom With Practice

Across all interviews, respondents reported positive outcomes derived from belonging to a local I-O group. Engagement in events and activities were among the top benefits. They stated that hands-on experiences provided by local I-O groups helped to bridge the scientist–practitioner divide and exposed students to applications of I-O psychology in the real world, helping them learn "how things actually worked." The respondents also noted that speakers at the local I-O events "described real world experiences—more real than school." One local I-O group brought in practitioners to pitch ideas about things they had been thinking about working on and engaged students in discussions about solutions to the problems.

The Personnel Testing Council Metropolitan Washington (PTCMW) sponsors an annual Graduate Student Consulting Challenge. Students reported that this challenge allowed them to experience the "practical process of consulting." This provided graduate students with an opportunity to put into practice skills they learned in the classroom. One student expressed that it was "great to work with a real-life client, and it gives you a snapshot of real-life job experiences." Other students noted that the feedback they received was very valuable.

Students also appreciated the workshops and educational experiences provided by their local I-O groups. They stated that the information presented at the workshops was useful in attaining a diverse view of the field. The workshops and educational experiences were insightful and helped students stay current by focusing on cutting edge research and hot topics. They also provided students with practical information, for example, specific terms to add to one's resume. One student said that it helped to connect "with different professionals and learn how the research and theories I was learning connected back to real-life scenarios." The information they learned helped them prepare for comprehensive examinations and could be incorporated into their own research. GAIOP conducted a workshop where people reported on information they learned about at the annual SIOP conference. Students reported that they found this session very valuable, and one indicated that they "got information I could incorporate into the methods section of my dissertation." The workshops and presentations created opportunities for collaboration beyond the students' own graduate programs and allowed them to seek help from other members with unique or specialized expertise.

Connecting With Other Professionals

Another treasured benefit was networking and making connections. Students reported the value of getting to know professionals in the field. They were able to meet "like-minded individuals they could bounce ideas off." They were also able to connect with their peers from other graduate programs. One

student appreciated that they "had folks to reach out to when looking for a job." They felt that attending meetings in person helped them grow their networking skills. These opportunities aided their learning of professional expectations for I-O psychologists. For one student, connecting with professionals revealed the light at the end of the tunnel—where graduate school ends and their career path begins.

Respondents also reported that local I-O groups provided formal and informal opportunities for mentoring. Local I-O groups with formal mentoring programs connected students with a specific mentor. When mentoring was informal, students easily found members that provided academic and research advice, as well as career information including offering guidance on resumes, interview tips and tricks, or pointing them in career directions. One interviewee served as a mentor and taught other new students the ropes.

Students reported feeling that attending local I-O group meetings gave them greater awareness and understanding about potential career opportunities. One student said that it was like "getting a realistic job preview." Another indicated that they "learned about jobs and what people were doing in my city." Hearing from different presenters gave the students an inside view of the consulting world and helped them define what they wanted in a career. One student met an alumnus who had graduated years earlier from her same I-O program who told her about career services offered by her university of which she was not aware.

Developing Professional Skills and Identity

The students indicated that local I-O groups also helped them build a sense of community by shaping their sense of professional identity and belonging to SIOP. One student indicated that it "bridged the gap between being a student and SIOP," and that the local I-O group meetings felt like a scaled down version of the SIOP annual conference. They reported that when they then went to the SIOP annual conference, they felt more comfortable because it was familiar. They also felt like they belonged because they knew people to whom they could say hi. They reported that these experiences highlighted "the benefits of becoming a SIOP member."

Local I-O groups also afford graduate students an opportunity to serve as leaders. By serving on the board of a local I-O group, graduate students stated how they learned valuable leadership skills, role expectations, and knowledge about how these organizations operate.

Another benefit discussed was the chance to practice communication skills. Students felt this helped them learn how to effectively communicate with professionals in their field. One student noted that they had the opportunity to present at a meeting and that "being a presenter was a good, useful experience." Through these interactions students reported receiving valuable feedback and encouragement.

How We Could Do Better

Our participants had some recommendations for what they would like their local I-O group to offer. Top on this list are opportunities for tangible hands-on practical experiences, workshops that focus on skill sets needed as a practitioner, and more consulting challenges/consulting scenarios to practice their applied skills. As one student said: "connect actual people with actual work." One suggestion was to create mini challenges that are less competitive and more focused on fun and creativity.

Students also wanted more formal mentoring programs and a chance for intentional directed networking. They noted that networking is different when attending in-person meetings than attending virtually.

Because many students indicated that they had little prior experience with networking, some training or programming focused specifically on navigating networking would be helpful.

Graduate students would also like to see programming and workshops geared to graduate students and early career professionals (e.g., interview preparation, professional role expectations, building a sense of community and identity as an I-O professional). Mentoring would also be useful to help students make the transition from being a graduate student to their first job. Local I-O groups can foster career introductions by connecting students with local companies that are hiring. A final recommendation was to create a book club to generate discussions about newly published books.

Connection to Diversifying I-O Psychology

The recommendations and insights offered by students of local I-O groups align with recent research from other SIOP committees. For example, the Diversifying I-O Psychology (DIP) committee aims to bring awareness of the field of I-O to diverse undergraduate students, specifically Black and Hispanic students. Former DIP Conference Chair **Stephanie Murphy** noted,

Students at the DIP conference value hearing stories from academics and practitioners in different areas of I-O. They learn not just the many roles and jobs they can hold with a background in I-O, but they also learn about the different paths they can take to get there. Most importantly, these diverse students get to see and hear from people that look like them and learn about their experience getting into grad school and navigating their careers.

Across SIOP, there are opportunities to continue to foster community and engagement that benefits students and professionals alike. Many SIOP committees work to build student experiences; for a complete list of volunteer opportunities visit <https://www.siop.org/Membership/Volunteering>.

Local I-O Groups Can Learn From Each Other

Local I-O groups have a lot to offer graduate students from hands-on practical experiences, enriched learning opportunities through workshops, networking and mentoring opportunities, and building an I-O identity and sense of community. Newer I-O groups may want to reach out to more established groups to identify resources they can use to establish these types of programs and opportunities to ensure graduate students find value from participating in their local I-O group.

**Pop Psychology Book Club, Episode Four:
Mainstream Media in The Classroom With Prof. Sabrina Volpone**

Carrie Ott-Holland

Welcome back to Pop Psychology Book Club! Hopefully, you've been enjoying this themed issue on I-O psychology in the classroom. Instead of featuring a popular press book, for this issue I interviewed esteemed DEI researcher and instructor at the CU Boulder Leeds School of Business, **Sabrina Volpone**. We talked about how she approaches and uses outside media in the courses she teaches—the topic of a chapter she's coauthored in the forthcoming book *Championing Diversity, Equity, and Inclusion: Effective Strategies to Lead, Teach, and Consult Across Disciplines and Demographics*. I hope you enjoy this interview as much as I did!

COH: *As you know, this column looks at what and how I-Os can draw from the popular press, both to reinforce and expand our professional messaging. It's also an opportunity to study the cultural context surrounding management research. When you think about the students you teach, what's the cultural context they're bringing to the classroom?*

SV: When I'm teaching classes with I-O content such as organizational behavior, typically to sophomore business majors, their idea of management is sometimes inaccurate when they start the course. For example, some students have limited work experience, so their ideas of workplace relationships come from TV shows like *The Office* or *Succession*. Other students, even those with work experience, may know only about the leadership styles of CEOs in the press, like Tim Cook or Elon Musk. Examining popular examples of workplaces and leaders in a way that is consistent with psychology and management theories has become an important goal so that I can meet students where they are when they enter the class.

More generally, undergrads heavily reference their parents as a guide for understanding things like: What relationships should I have with leaders at work? What should I expect from leaders in the workplace? To what extent should I trust my employer and manager? That's an influential cultural context that is also important to consider.

MBAs tend to be more experienced in the management context that they bring to the classroom. Yet, some students can sometimes come in with deep knowledge of their job function but more narrow expertise around applying I-O and OB topics. For example, if someone was an accounting major, they probably have developed a nuanced understanding of accounting through their degree and then their experience at their organization through their accounting-based work. When they take an elective like leadership or diversity during their MBA coursework, they're encouraged to consider: Why might leaders be making decisions in a certain way, and how does this impact their view of my work in the accounting department? How do we think about diversity not just within our organization but also within a societal context? How does this impact my work as an accountant?

These questions require the student to think about their work beyond their specific domain. When individual contributors broaden their perspective of how the world works and how that connects to the work they do, they can increase their organizational impact. This applies to leadership or diversity along with a number of I-O, psychology, and management concepts.

COH: *How do you find stories or case studies to bring into your teaching? Do you ever reference popular press books to help introduce a topic?*

SV: When I teach my diversity class, students are allowed to pick their own “textbook.” They get to pick from a list of 25 popular press books covering different aspects of diversity. Some books are memoirs, like *Autism in Heels*, which looks at the intersection of gender and neurodiversity, or autobiographies like Trevor Noah’s *Born a Crime*, but most are data-driven books such as *Invisible Women: Data Bias in a World Designed for Men*.

Once they pick a book, they’re assigned to a book club with other class members. Students with similar books (e.g., race, LGBTQ+ experiences) get matched, and they meet four times throughout the semester to discuss connections between the books and course topics. At the end of the course, they have a group book report assignment where they talk about the experience of being in the book club.

Different books resonate with different people—some people want facts, whereas some people learn better through exposure to another’s story. This assignment allows students to read something that interests them personally, based on where they are in their life journey. They’re able to make connections that aren’t possible from just reading a textbook. It also enriches their thinking and helps them talk about sensitive diversity topics without having to center the conversation around themselves.

COH: *I imagine when you’re teaching a diversity course in particular, current events are constantly inserting themselves into the classroom.*

SV: Yes, there are many times when diversity-related headlines—legal decisions or movements that are having a societal-level impact—will get media attention right before your class starts, and it can be really disruptive to the class plans you had in place. Students want to talk about these things—how the issues pertain to their life, their future career, and so on. But there is a need to balance the discussion of breaking news with planned class content, like the theory and case studies that we need to get through. The trick is to position the breaking news story alongside the planned content, and this can take some shifting in the moment as a professor.

To make things more complicated, you have students who are at different stages of personal maturity and have different lived experiences. For example, after the murder of George Floyd, many students had never talked about racism and police brutality with this type of depth in the classroom. Additionally, for some students, the fact that people were watching the video of this murder was traumatizing, and it was triggering to be asked to discuss this event. It’s hard to bring in current events and do service to the topic while being mindful of these different student groups and trying to support everyone simultaneously when they are all at different stages in their understanding of the topics at hand.

Ultimately, I’ve found it helpful to address current events, especially when students want to interact with headlines, but it is essential to connect headlines to the course objectives. Therefore, as an instructor, I am careful to integrate current events strategically, as I find breaking news has an influence on course time.

COH: *I’m looking forward to reading your book chapter! Thank you again for speaking with me today.*

SV: Thank you!

That’s a wrap! You can check out Sabrina’s forthcoming chapter on breaking news in the classroom:

Volpone, S. D., Decker, M., & Reed, R., & Sevilla, M. (in press). When breaking news breaks class plans: Navigating class discussions when diversity topics are in the news. In O. Holmes, IV (Ed.). *Championing diversity, equity, and inclusion: Effective strategies to lead, teach, and consult across disciplines and demographics*. Palgrave Macmillan Publishing.

You can also visit her lab's website at <https://diidmgmtresearchlab.com/>.

I'll be on leave for the next two quarters and wish everyone a wonderful 2024. Until next time!

The SIOP Ambassador Program Creates Welcoming Conference Experiences and Opportunities
SIOP Conference Committee
Anna Godollei, Shani Pindek, Amy Barron, Amy Minnikin, and Annie Simpson

“As someone who is just attending SIOP as a graduate student for the first time, I had a lot of questions that pertained about more than just the conference. I feel like my Ambassador provided a wealth of knowledge and answered so many of my questions.”

“Just thank you! This is the only conference I've ever been in that takes intentional steps to increase networking and build bonds between people.”

“[The Ambassador Program] made my first time at SIOP [Annual Conference] so much more welcoming!”

-2023 Ambassador Program Newcomer Respondents

Fortunately, Ambassador Program experiences like these are not unique! According to the Ambassador Program survey conducted after the 2023 conference, the majority (80%) of newcomers were satisfied with their overall Ambassador program experience. In addition, 85% Newcomers were satisfied with the relationship they had with their Ambassador. Of the Newcomer respondents, 83% indicated they were likely to recommend the Ambassador Program to a prospective Newcomer, and the majority of newcomers wanted to participate as an Ambassador in the future!

Ambassadors also report enjoying the program *just as much* as Newcomers do. The postconference survey showed that 89% of Ambassadors were satisfied with the program, and 88% reported wanting to participate as an Ambassador again in the future! Ambassadors were particularly satisfied with communication from the Ambassador Program team as well as with their Newcomer before the conference. The Ambassador Program overall is a great way to expand your network in the I-O community and create lasting professional relationships that help new conference attendees navigate the sessions. **We'd love for you to participate!**

Other insightful feedback from the post conference survey has helped us understand how we can improve the program as well as the Newcomer and Ambassador experiences. Specifically, this year's Ambassador Program subcommittee has been focused on:

- Actively working on ways to better match Newcomers and Ambassadors
- Enhancing the Ambassador Program event during the conference
- Ensuring all parties remain engaged throughout the program

Our Newcomer base continues to remain strong with over 25% of first-time SIOP conference attendees participating. With the annual conference growing every year, SIOP can be an overwhelming (and exhilarating) experience, particularly for those who are new to the event. Since 2010, the SIOP Ambassador Program has supported our newest attendees by matching them with previous conference attendees willing to share what they've learned and pass along knowledge to support newcomer success.

Serving as an Ambassador is a **relatively small time commitment** that can have a **tremendous impact** on first time SIOP Annual Conference attendees, including providing a positive introduction to the SIOP community. Anyone wanting to participate as an Ambassador or Newcomer can sign up within the 2024 SIOP Annual Conference registration process. We encourage everyone—from graduate students who

are more advanced in their programs, recent graduates in academic or applied jobs, or more veteran SIOP members—to consider showing a first time SIOP Annual Conference attendee the ropes.

A table with the program requirements for each role can be found below.

<u>Ambassadors</u>	<u>Newcomers</u>	<u>Program requirement</u>
✓	✓	Registered for 2024 SIOP Annual Conference
✓		Has already attended at least one Annual Conference
	✓	Attending the Annual Conference for the first time
✓	✓	Agree to follow all program expectations
✓	✓	Respond to conference communications
	✓	Initiate contact with your Ambassador via email
✓	✓	Connect by email or phone at least once before the conference
✓	✓	Meet at least once during the conference through an in-person, virtual, or hybrid check-in.

We're very excited about the 2024 SIOP Ambassador Program and look forward to your participation! Keep an eye out for this year's program campaign and help us #MakeAConnection with someone new to SIOP. If you have any questions about the Ambassador Program contact us at ambassador@siop.com or visit our [webpage](#).

We'd love to hear your stories about being a Newcomer or Ambassador! If you had an experience with the Ambassador Program that you would like to share or photos of you with your Ambassador or Newcomer, please email us at ambassador@siop.com. For example: Have you continued your professional relationship beyond the conference where you met? Have you had a research project or conference presentations with your Ambassador or Newcomer? Do you now work with your Ambassador or Newcomer?

SIOP in Washington: Advocating for I-O in Federal Public Policy

Amanda Bruno
Lewis-Burke Associates, LLC

Since July 2013, SIOP and Lewis-Burke Associates LLC have collaborated to make I-O science and research accessible to federal and congressional policy makers. SIOP has embedded a foundational government relations infrastructure within the organization, enabling SIOP to develop an authoritative voice as a stakeholder in science policy in Washington, DC and to promote SIOP as a vital resource for evidence-based decision making.

SIOP Hosts Webinar for DOJ COPS Office Awardees

GREAT Chair **Kristin Saboe** and members of SIOP's Policing Initiative presented a webinar on "Utilizing Science-Based Practices to Enhance Police Recruiting and Hiring" for grantees of the Department of Justice's Office of Community Oriented Policing Services (COPS Office). The webinar, part of the efforts around SIOP's ongoing memorandum of understanding (MOU) with the COPS Office, featured members of the Policing Initiative sharing practices grounded in I-O research and how they can be used in law enforcement recruitment and retention. The webinar was followed by a robust question and answer session, with attendees demonstrating significant interest and appetite for additional information on I-O psychology. The SIOP Policing Initiative continues to identify additional opportunities to translate I-O research into practice and embed I-O principles into state and local law enforcement agencies across the country.

White House Issues Executive Order on Artificial Intelligence to Drive Innovation While Reducing Risks

On October 30, President Biden issued [Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence](#). The executive order is an attempt to develop a more comprehensive, whole-of-government approach to drive innovation in artificial intelligence (AI) applications while managing risks, especially in national security, public health and safety, and job displacement. The executive order does not launch major or new initiatives but clarifies roles and responsibilities across federal agencies and requires federal agencies to develop more detailed implementation plans over the next several months. The release of the executive order coincided with the first ever Global AI Safety Summit hosted by the UK government, at which 28 governments, including the US, signed up to the Bletchley Declaration on AI safety research. Specific provisions in the executive order address AI's potential harms and benefits to employees' well-being, AI-related collection and use of employee data, nondiscrimination in hiring involving AI and other technology-based systems, training law enforcement on responsible use of AI, and federal hiring flexibilities to recruit individuals with expertise in AI and data science.

SIOP had engaged with the development of the executive order by responding to a Request for Information (RFI) from the White House Office of Science and Technology Policy (OSTP). The RFI, "[National Priorities for Artificial Intelligence](#)," sought feedback on safe deployment of AI, impacts to national security, equity considerations, economic benefits and harms, and other broad topics. SIOP's response referenced the [Principles for the Validation and Use of Personnel Selection Procedures](#) and the [Considerations and Recommendations for the Validation and Use of AI-Based Assessments for Employee Selection](#) and focused on the need for AI-based systems to meet the same standards for traditional hiring and assessment systems.

Members in the Media

Amber Stark Marketing and Communications Manager

Awareness of I-O psychology has been on the rise thanks to articles written by and/or featuring SIOP members. These are member media mentions found from Sept. 4, 2023, through Dec. 3, 2023. We share them on our social media and in this column, which you can use to find potential collaborators, spark ideas for research, and keep up with your fellow I-O colleagues.

We scan the media on a regular basis but sometimes articles fall through our net. If we've missed your or a colleague's media mention, please email them to astark@siop.org.

Technology in the Workplace

Tianjun Sun on the ability of AI chatbots to infer personality: <https://www.wibw.com/2023/09/14/k-state-psychology-professors-research-finds-ai-chatbot-can-infer-personality/>

Note: The research team included current SIOP Members Jinyan Fan, Bo Zhang, and Elissa Hack.

Tara Behrend and **Leslie Hammer** on the psychological impact of electronic monitoring in the workplace: <https://www.apa.org/topics/healthy-workplaces/employee-electronic-monitoring>

Matthew Neale on how to use computer games to spot talent:

<https://www.forbes.com/sites/rachelwells/2023/09/25/employers-now-using-computer-games-to-spot-talent-psychologist-explains/?sh=3e01ea02326a>

Scott Highhouse and **Andrew Samo** on the struggle to tell the difference between AI and human art: <https://www.bgsu.edu/news/2023/10/machine-learning-study-from-bgsu-doctoral-student-and-professor.html>

Tomas Chamorro-Premuzic and **Christine Boyce** with four critical factors that will help project managers realize AI's potential: <https://hbr.org/2023/11/4-factors-that-will-help-project-managers-fulfill-ais-potential?ab=HP-hero-latest-text-3>

Neil Morelli on AI in talent assessments:

<https://www.forbes.com/sites/forbeshumanresourcescouncil/2023/11/16/ai-in-talent-assessments-three-key-considerations-for-leaders/?sh=262bdda04fe1>

Tomas Chamorro-Premuzic on the possibility that AI could be better than humans at evaluating job seekers' potential: <https://www.fastcompany.com/90982342/science-backed-reasons-ai-is-better-at-predicting-your-potential-in-a-job>

Mental Health and Well-Being

Allison Gabriel with ways to recover from virtual exhaustion:

<https://nihrecord.nih.gov/2023/09/29/psychologist-discusses-ways-recover-virtual-exhaustion>

Lori Foster and **Jenna McChesney** on the potential drawbacks of posting about mental health online: <https://finance.yahoo.com/news/posting-about-mental-health-struggles-could-hurt-how-a-potential-employer-views-a-worker-study-finds-160009905.html>

Cristina Banks on trends to ease stress at work: <https://news.yahoo.com/bare-minimum-monday-gets-easing-200043740.html>

Misc.

Matt Paese on succession planning: <https://medium.com/authority-magazine/succession-matt-paese-on-how-to-do-effective-succession-planning-fafd51b4fb2b>

Gudela Grote with a research-backed tip for improving your chances of finding a job: <https://www.futurity.org/job-seeker-confidence-2981862-2/>

Joe Allen optimizing workplace meetings: <https://www.forbes.com/sites/benjaminlaker/2023/10/18/how-to-have-effective-meetings-from-theory-to-transformative-practice/?sh=61a1359c6d5b>

Gena Cox on the value of respect as a leader behavior and its potential impact on DEI efforts: <https://www.fastcompany.com/90968094/leaders-should-prioritize-this-one-thing-to-make-inclusion-stick>. Includes information from **Cort Rudolph**.

Adam Grant on a research grant award of up to \$100K for researchers looking into areas of human potential and workplace trends: <https://www.cnn.com/2023/11/15/wharton-psychologist-adam-grant-on-the-3-biggest-challenges-facing-workers-right-now.html>

Ronald Riggio and **Traci Cipriano** on the connection between emotional intelligence and effective leadership: <https://www.nar.realtor/magazine/broker-news/network/how-emotional-intelligence-makes-you-a-better-leader>

IOtas

Jenny Baker Sr. Manager, Publications and Events



Eileen Linnabery has been promoted to partner at Vantage Leadership Consulting. “Eileen has an exceptional level of expertise that allows her to build strong, lasting relationships with our clients and understanding their needs,” said Keith Goudy, managing partner. “Eileen’s ability to build that trust has been instrumental in our company’s success and we are honored to welcome her into the partnership group as we look toward the future of Vantage Leadership Consulting.” In her new role, Eileen will continue to work with clients, and develop new products and services. She has the added responsibility of contributing to the strategy, operations, and brand building for the firm.



Matt C. Howard, University of South Alabama, has been named to the Clarivate Highly Cited Researcher List (2023), which recognized only 7,125 researchers worldwide. More information about the recognition can be found at <https://clarivate.com/highly-cited-researchers/>.